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New Taxa and New Combinations of Agaricales (Diagnoses Fungorum Novorum Agaricalium IV)

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New Taxa and New Combinations of Agaricales (Diagnoses Fungorum Novorum Agaricalium IV)

Abstract

A total of 276 new species is described, 1 in Polyporaceae, 10 in Hygrophoraceae, 182 in Tricholomataceae, 1 in Amanitaceae, 15 in Pluteaceae, 8 in Agaricaceae, 4 in Coprinaceae, 9 in Bolbitiaceae, 15 in Strophariaceae, 5 in Cortinariaceae, 7 in Crepidotaceae, 3 in Entolomataceae, 5 in Boletaceae, and 11 in Russulae. Furthermore, 13 new varieties (in Tricholomataceae, Pluteaceae, Bolbitiaceae, Cortinariaceae, Boletaceae, and Russulaceae) and 21 new combinations (in Tricholomataceae, Pluteaceae, Agaricaceae, Coprinaceae, Bolbitiaceae, Strophariaceae, Cortinariaceae, Boletaceae, and Russulaceae) are proposed.

Introduction

The new taxa proposed in this paper have been described, illustrated, and discussed previously (but not validly published, or not published in the correct combination) or will be described and illustrated in monographic papers now in preparation. If they are based on not validly published species of the author they are here validly published because their first mention was published in works not dedicated to species descriptions (Singer, 1984, 1986; Singer & Araujo, 1979). The various editions of Singer, *The Agaricales in Modern Taxonomy* (1951–1986) were accompanied by papers providing the descriptions of newly introduced species for this work (Singer, 1948, 1961, 1973). The present paper is a continuation of this series. In the present case it will appear somewhat after

rather than before the appearance of the respective edition of the book, a circumstance which gives us an opportunity to add a few species not integrated in the scheme provided in *The Agaricales in Modern Taxonomy* but important for taxonomical, ecological, or other reasons.

In the present circumstances, an English translation of the Latin diagnoses is not warranted inasmuch as the diagnoses are extended to give all data available and necessary for a full description. According to the wishes of the editor and a large number of mycologists, all but the descriptive data are now given in English. Colors are, where possible and desirable, indicated in color chart terms which are those of Maerz & Paul (1930) [M&P], Munsell (1947) [Mu], or Kornerup & Wanscher (1968) [Methuen]. Where other color charts were used, those are indicated in the respective description and bibliography. The “*typus*” indicated for the new taxa should be understood as representing the holotype as far as the author’s intention is concerned, and consists of a single collection and specimen. Where the type collection has been divided, the location of the holotype is indicated. This author is not responsible for later transfers of specimens to other institutions. The herbaria housing the quoted specimens are abbreviated as in the Index Herbariorum (1974). Other abbreviations are restricted to those easily understood and in general use in mycology.

The families and genera are arranged exactly as in Singer, *The Agaricales in Modern Taxonomy* (1986), and terms are used in the sense explained in this work. Within the genera the species are arranged in alphabetical order.

POLYPORACEAE (Fr.) Fr.

Pleurotus favoloides Sing., spec. nov.

Pileo hyalino, hygrophano, albicante, glabro vel subglabro, ad marginem interdum fimbriato-crenulato sed vix ciliato, pustulato-scröbiculato, convexo, mox applanato, profunde umbilicato supra stipitem, 15–37 mm lato. **Lamellis** albis, plus minusve crenulatis vel sinuosis ad aciem, sub lente irregulariter hispidulis ex epigris, angustis, intervenosis, arcuatis, decurrentibus. **Stipite** albo, subcentrali vel sublaterali, nudo, glabro solido, basin versus attenuato sed ad basin ipsam frequenter leniter incrassato, curvato, 11–22 × 1.2–1.7 mm. Velo nullo. **Carne** pilei primum subcarnosa, flexibili, albo, immutabili. Odore subnullo. Sapore miti.

Sporis 7–9.5 × 2.5–3.3 μm, oblongo-subfusoides vel plus minusve cylindraceis, levibus, inamyloideis. **Hymenio**: Basidiis 20–29 × 5.3–6 μm, sterigmatibus saepe elongatis (usque ad 17 μm longis), basi fibulata, basidiolis haud fusoides. Cystidiis nullis, sed cheilocystidiis ad aciem haud heteromorpham numerosis, frequenter fasciculatis, 25–63 × 3.5–7.5 μm, subfilamentosis, apice rotundatis vel raro breviter angustequ mucronatis, rarissime lateraliter ramosis, hyalinis. Epigris (pegs) ad latera aciemque lamellarum (10–)70–75 μm longis, hyphosis, multiseptatis, hyphis 2.5–4 μm latis apiceque rotundatis, tenuitunicatis. **Hyphis** omnibus inamyloideis, haud gelatinosis, in pileo primum generativis tantum sed postea amphimitice cum sceletico-ligativis intermixtis, fibulis in generativis numerosis; tramate hymenophorali irregulari, hyphis intertextis tenuiter vel crasse tunicatis (his pariete 1.2–1.7 μm crassa, hyalina instructis), 0.7–4 μm crassis, hinc inde usque ad 11 μm inflatis; hyphis sceletico-ligativis longissimis sine septis, saepe furcatis vel curvato-flexuis, apice cauda angustata subacuta instructis. Subhymenio 12–15 μm alto, multiseptato, parte inferiore (prope trama proprium) magis filamentoso et regulari. **Epicute pilei** cutiformi vel densa, ex hyphis tenuibus subparallelis efformata, pauca et sparsa diverticula breviter hyphosa (e. gr. 6–11 × 2.5–4 μm) emittente marginemque versus epigrigera (peg-bearing).

Ad truncos radicesque aereas *Tovomita pirifolia* Planch. & Triana saprophytice vel parasitice ecrescens, gregatim, in silva tropicali inundabili aquae-nigrae (igapó).

TYPUS—Brazil, Amazonas, Igarapé do Taru-

mãzinho, 26 IV 1978, *Singer B 10990* (INPA). Additional collection: same locality, 26 III 1980, *Singer B 12084* (INPA).

Because of the shape of the lamellae and the wide subhymenium, this species belongs in the genus *Pleurotus*, sect. *Lentodiellum*, near *P. subtilis* (Berk.) Sing., but the anastomosing lamellae and the pustulose-scröbiculate pileus are similar to those of *Favolus* (sensu Fries), for example *Polyporus dermoporus* Pers. (= *Favolus brasiliensis* Fr.) The lamellae in our species are not strictly favoloid but merely strongly intervenose. Species like *Pleurotus favoloides* show how futile it is to separate *Polyporus* or “*Favolus*” from *Pleurotus* (or *Lentinus*) by inserting them in different families or orders.

HYGROPHORACEAE Roze

Hygrotrama araguense Sing., spec. nov.

Pileo fusco-fuligineo, subfibrilloso e fibrillis plerumque appressis, levi, convexo, centro profunde infundibuliformi, 6–9 mm lato. **Lamellis** albis, subdistantibus, sublatis, crassiusculis, acie integris, profunde decurrentibus. **Stipite** brunnescente, glabro, levi, subaequali, circiter 20 × 1 mm. Velo nullo. **Carne** alba vel albida, inodora.

Sporis 9.5–12 × 6.5–8.5 μm, ellipsoideis, depressione applanationeque suprahilari destitutis, inamyloideis, levibus. **Hymenio**: Basidiis bisporis, 49–67 × 6.5–8.5 μm, sterigmatibus usque ad 10 μm longis. Cystidiis cheilocystiisque nullis. **Hyphis** hyalinis, defibulatis, in parte superiore multis inflatis (usque ad 10 μm diam.), minus inflatis in parte inferiore, omnibus inamyloideis neque gelatinosis. Tramate hymenophorali regulari, in mediostrato crasso ex hyphis 1.5–4 μm latis efformato; strato laterali crasso ex hyphis magis intertextis, usque ad 9 μm latis efformato. **Epicute pilei** et hypodermio paullum differentiatas, sed illa fibrillas hyphosas emittente cuius apices rotundati et inamyloidei sunt, hyphis 3.5–11 μm latis, pigmento intracellularem, granularem (granulis numerosis, globulosis, fuscis vel fuscidulis).

Ad terram in silva tropicali.

TYPUS—Venezuela, Aragua, Parque Nacional Henry Pittier, 8.6 km S of Rancho Grande, 6 VII 1971, *Dumont, Haines & Samuels* (NY).

Hygrotrama tetrasporum Sing., spec. nov.

Pileo griseo, subvelutino, sicco, obtuso, levi, convexo, 2.5 mm lato. **Lamellis** albis, sat angustis, haud intervenosis, arcuatis, decurrentibus. **Stipite** pallide griseo, glabro, levi, sicco, gradatim et leniter apicem versus attenuato, 10×0.7 mm (ad apicem ± 0.3 mm lato). Velo nullo. **Carne** albida vel pallidissime griseola, immutabili, inodora.

Sporis $7-8 \times 5.5-6.5$ μm (sed usque ad 10.2×6.2 μm e basidiis bisporis), subglobosis vel breviter ellipsoideis, guttula amorphia et pariete firma praeditis, levibus, inamyloideis, appendice eccentrica hilari sat conspicua, $1-1.5$ μm longa munitis, depressione suprahilari destitutis. **Hymenio**: Basidiis $32-39 \times 8.5-10$ μm , clavatis, cc. 95% tetrasporis, cc. 5% bisporis, illis sterigmatibus usque ad 8 μm longis munitis. Cystidiis et cheilocystidiis nullis. Basidiis et basidiolis anguste clavatis vel subcylindraceis ad basin haud fibulatis. **Hyphis** inamyloideis, defibulatis, eis strati superioris pilei corpusculis pseudoamyloideis internis repletis et latis, nonnullis granulis internis pigmenti fusci solidi visis. Tramate hymenophorali subregulari ex hyphis filiformibus vel cylindraceis efformato, omnibus $3-6$ μm latis, tenuitunicatis, hyalinis, haud gelatinosis. **Epicute pilei** cutiformi, ex hyphis latiusculis, cylindraceis vel subventricosis, cellulis e. gr. 42×12 μm , haud gelatinascentibus, levibus et ex eis in parte superiore nonnullis cellulis simillimis ascendentibus, ad apicem late rotundatis, nonnullis ex eis recurvatis vel erectis sed haud hymeniformiter dispositis; pigmento fusco, granulari, interno, multis cellulis etiam corpusculis pseudoamyloideis repletis. Hypodermio paullum differentiato, etiam cutiformi, corpusculis pigmenti et pseudoamyloideis hypharum internis numerosis, pariete tenui, hyalino. Supra epicutem interdum nunnulae hyphae filiformes applicatae adsunt.

In silva tropicali pluviali arenosa (campinarana), humicola, solitario.

TYPUS—Brazil, Amazonas, Estrada Manaus-Caracará km 45, 28 II 1978, *Singer & Araujo B 10714* (INPA).

This species is closely related to *H. araguense* Sing. (see above).

Hygrocybe amazoniensis Sing., spec. nov.

Pileo aurantiaco, interdum rubro, margine flavo sed aurantio-striato at levi vel sublevi, hygro-

phano, dehydratione pallido, in siccis autem ad marginem aurantio-rubescente sed demum in herbario margine flavo et centro pallido, glaberrimo, subnitido sed haud viscido, convexo, centro anguste depresso vel umbilicato, 9–10 mm lato. **Lamellis** aurantiacis acie flavis, rarius aurantiacorum acidem marginemque versus flavidis vel cremeis, latis vel latissimis, subdistantibus vel distantibus, haud intervenosis, in siccis flavis, subsinuato-decurrentibus vel adnexus vel rotundato-adnatis. **Stipite** aurantio-rubro vel aurantiaco, subflavescente siccando, sicco, glabro, levi, solido sed plerumque mox cavo, aequali vel ad basin attenuato vel ad basin apicemque attenuato, $30-41 \times 1.5-2.5$ mm. **Carne** aurantio-rubella vel pallida aut pallescente, inodora.

Sporis dimorphis, macrosporis perpaucis $16.5-18.5 \times 10-12$ μm , microsporibus permultis, $7.5-8.5 \times 4.5-6.5$ μm vel (in forma rubra) $12-14.5 \times 7-9.5$ μm ; intermediis (basidiis bisporis?) $\pm 16 \times 8.5-9$ μm interdum praesentibus, omnibus hyalinis, ellipsoideis, levibus, inamyloideis. **Hymenio**: Basidiis dimorphis: Macrobasidiis $36-85 \times 13.5-22$ μm , paucis, contentu lipoidi granulati vel amorpho denso repletis; microbasidiis $33-50 \times 6-13$ μm , plerumque absque contentu oleaginoso, omnibus clavatis vel ventricosis, tetrasporibus vel nonnullis microbasidiis bisporibus immixtis. Cheilocystidiis in acie lamellarum haud heteromorpha $40-67 \times 4.5-7$ μm , subtus $2.5-3.5$ μm diam., filamentosis sed apice plerumque claviculatis, subcapitatis, rarius anguste ventricosis, hyalinis, contentu visibilibus destitutis. Cystidiolis similibus sed brevioribus, frequenter flexuosis vel irregularibus, saepe raris et inconspicuis. Cystidiis veris nullis. **Hyphis** filamentosis ($1.5-5$ μm diam.) sed angustioribus quam in sectione Conicarum nec praelongis, haud gelatinosis, fibulatis. Hyphis oleiferis $2-6$ μm latis, contentu macrobasidiorum repletis, raro in hymenio intrusis. Tramate hymenophorali regulari. **Epicute pilei** cutiformi (numquam ixocutiformi), ex hyphis in KOH subhyalinis vel hyalinis elongatis efformato, hyphis erectis et dermatocystidiis nullis. Superficie stipitis haud gelatinosa, ex hyphis verticalibus, parallelis efformata.

Ad terram argillosam vel (forma rubra) arenosam solitario in silva terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (EMBRAPA), 13 VII 1977, *Singer B 10097* (INPA). Additional collection (red form): Reserva Ducke, 28 VI 1978, leg. *Ermelinda M. Freire*, comm. *Singer B 11249* (INPA).

This species belongs in the group around *H. firma* (Berk. & Br.) Sing. and is closely related to the following species.

***Hygrocybe campinaranae* Sing., spec. nov.**

Pileo rubro, siccando obtuse aurantiaco, opaco, glabro, vix viscido, levi, convexo, centro applanato siccando depresso, 12–13 mm lato. **Lamellis** rubris, aciem versus flavis, siccando uniformiter aurantiacis, latissimis, ventricosis, haud intervenosis, adnexis. **Stipite** rubro, siccando lamellis concolori, subtus glabro sed ad apicem pruina pallida pubescente, subaequali sed in tertia parte inferiore gradatim incrassato, cavo, $\pm 37 \times 2$ mm, ad basin 3–3.5 mm lato. **Carne** superficiebus concolori vel pallidiore, inodora.

Sporis dimorphis; macrosporis numerosissimis, $11.5\text{--}15 \times 7.3\text{--}11.5 \mu\text{m}$, saepe contentu oleaginoso repletis; microsporis $5.5\text{--}8.5 \times 3.5\text{--}5.5 \mu\text{m}$, rarius contentu oleaginoso repletis, omnibus ellipsoideis, hyalinis, levibus, inamyloideis. **Hymenio**: Basidiis dimorphis: Macrobasidiis $45\text{--}60 \times 10\text{--}16 \mu\text{m}$, contentu oleaginoso repletis, omnibus vel perpaucis exceptis tetrasporis. Microbasidiis $15\text{--}22(39) \times 6.5\text{--}7.5(12) \mu\text{m}$, multis ex eis contentu oleaginoso repletis, tetrasporis. Cheilocystidiis e. gr. $19 \times 3.5 \mu\text{m}$, exiguis (sed ex eis acie lamellarum heteromorpha vel subheteromorpha), clavatis, hyalinis, contentu oleaginoso destitutis. Cystidiis inconspicuis sed longis, anguste clavatis, ultra basidia projicientibus, contentu oleaginoso destitutis, e. gr. $100 \times 4 \mu\text{m}$. Cystidiolis cheilocystidiis similibus. **Hyphis** inamyloideis, fibulatis, haud gelatinosis. Tramate hymenophorali regulari, hyphis subparallelis, nonnullis usque ad $37 \mu\text{m}$ diam. inflatis. **Epicute pilei** cutiformi ex hyphis filamentosis, omnibus repentibus, superficialibus partim minime subgelatinosis sed ixocutem numquam formantibus. Hypodermium cutiformi, ab epicute et tramate pilei aegre differentiato. Superficie stipitis haud gelatinosa. Dermatocystidiis apicis stipitis ambobus typis cystidiorum hymenialium similibus; praeterea cellulis terminalibus vesiculosus vel ventricosis, $14\text{--}30 \times 8\text{--}20 \mu\text{m}$ praesentibus, his primum tenui-, postea crassitunicatis ($0.8\text{--}1.8 \mu\text{m}$), interdum septatis, chlamydosporicis(?) interdum utriformibus.

Ad lignum putridum dicotyledoneum in silva arenosa (typi campinarana) solitario.

TYPUS—Brazil, Amazonas, along road Manaus Caracaraí, km 125, 22 V 1978, *Singer B 11022* (INPA).

This species differs in the elements of the covering of the stipe, its color, shape, and habitat.

***Hygrocybe hololeuca* Sing., spec. nov.**

Pileo albo, glabro, levi, sed per medium radium pellucide striato, haud viscido, obtuse conico vel convexo, 7–14 mm lato. **Lamellis** albis, medio-criter latis vel satis angustis, haud intervenosis, distantibus, adnatis vel decurrentibus. **Stipite** albo, glaberrimo, haud viscido, cavo, aequali aut ad basin gradatim incrassato, $\pm 27 \times 1\text{--}1.5$ mm, ad basin usque ad 2 mm incrassato. **Carne** alba, tenui, immutabili, inodora.

Sporis $5.3\text{--}6.5 \times 4.5\text{--}5.8 \mu\text{m}$, subglobosis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $25\text{--}36(41) \times 5\text{--}8.8 \mu\text{m}$, tetrasporis. Cystidiis et cheilocystidiis nullis. **Hyphis** plerumque filamentosis, nonnullis usque ad 10 vel $20 \mu\text{m}$ inflatis sed haud longissimis (e. gr. $55 \mu\text{m}$) inter septa, haud gelatinosis, tenuitunicatis, fibulatis, inamyloideis. Hyphis oleiferis $5\text{--}5.5 \mu\text{m}$ latis. Tramate hymenophorali regulari, ex hyphis leniter intertextis vel parallelis efformato. **Epicute pilei** cutiformi, haud gelatinosa; dermatocystidiis et endocystidiis nullis vel raris, dermatocystidiis $24\text{--}34 \times 4\text{--}7 \mu\text{m}$, ventricoso-capitatis vel fuseoideo-ampullaceis vel utriformibus; endocystidiis rarissimis, sed paucis cellulis hypharum abrupte latoribus (usque ad $10 \mu\text{m}$) et structuram Clitocybis hydrogrammae in mentem revocantibus. Stipitis superficie haud gelatinosa et dermatocystidiis destituta.

Ad terram argillosam in silva pluviali terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (EMBRAPA), 17 V 1977, *Singer B 9639* (INPA). Additional collection: same locality, 14 VI 1977, *Singer B 9972* (INPA).

A third collection (*Singer B 11014*) was collected in a different forest type, viz *campinarana*. It differs in convex but umbonate or papillate pileus, in estriate, but sometimes slightly sulcate margin, the presence of cystidia ($36\text{--}50 \times 8\text{--}19 \mu\text{m}$, fusoid-ampullaceous), and vaguely subgelatinous epicutis. It grows gregariously near the Manaus-Caracaraí road in May on rotten wood and is preserved under the provisional name "*H. hololeuca*" (INPA). I believe (but am not certain) that *Hygrophorus subaustralis* Smith and Hesler sensu Dennis (1953) is the same. Hesler's species differs in ellipsoid or subovoid spores $3\text{--}4 \mu\text{m}$ broad

and in pileus and stipe being larger as well as in the shape of the cystidia. After further observations show that we have here an independent species, this should be validly described under the name *Hygrocybe hololeuroides*.

***Hygrocybe lactarioides* Sing., spec. nov.**

Pileo badio ("chutney" M&P), centro obscuriore, margine pallidiore, glabriusculo, sicco subtomentoso et debiliter ruditerque radiatim plicato, convexo, centro depresso, ± 17 mm lato. **Lamellis** cinnamomeis (inter "Titian gold" et "saona" M&P) vel pileo subconcoloribus, satis angustis (2–3 mm latis), subcrassiusculis, haud intervenosis, confertis, adnatis et dente decurrentibus. **Stipite** cinnamomeo-brunneo ("cinnamon brown" M&P), in vegeto manifeste badio-piloso-pruinoso, glabrescente et minute punctato in siccis, cavo, basin versus attenuato, 43×4 mm. **Carne** subconcolori-pallidiore, amarissima, inodora.

Sporis $4.2\text{--}4.8 \times 3.5\text{--}3.8 \mu\text{m}$, neque angularibus neque ornamentatis sed valde irregularibus forma, inamyloideis, contentu azureo cresylico vivide caeruleo et pariete homogenea. **Hymenio:** Basidiis $29\text{--}34 \times 3.5\text{--}7 \mu\text{m}$, (1–)4-sporis, intus oleagineo-guttulatis, clavatis, basidiolis subfilamentosis. Cystidiis typi pseudocystidiorum fusoides vel fusoidio-ampullaceis apice tenui ($1.3\text{--}1.5 \mu\text{m}$ diam.) subacuto vel obtusato praeditis, plerumque contentu sparse azureo cresylico caerulescente impletis, apice granulari vel incrustatis, interdum septa secundaria munitis, $33\text{--}65 \times 3.5\text{--}7.5 \mu\text{m}$, ultra basidia projicientibus. **Hyphis** hyalinis vel pallide flavidis, fibulatis, inamyloideis; hyphis oleiferis tenuibus praesentibus. Tramate hymenophorali regulari, hyphis parallelis vel subparallelis. Tramate stipitis ex hyphis longitudinalibus parallelis efformato. **Epicute pilei** trichodermatoidea, cellulis terminalibus cystidiis et basidiolis frequenter similibus. Stipitis tegumento ex hyphis terminalibus ascendentibus vel erectis fasciculatis, levibus, subhyalinis (KOH) efformato.

Ad terram in silva pluviali tropicali.

TYPUS—Bolivia, Guayaramerín, 16 III 1956, *Singer B 2012* (LIL, "Mamoreia lactarioides ad int.").

This species is somewhat intermediate between *Hygrocybe* and *Hygrotrama*. The structure of the epicutis and the colors seem to indicate *Hygrotrama*, but the pseudocystidia and the absence of

intraparietal pigments are the reasons why it is described under *Hygrocybe* in the present paper. A final decision will be possible only after cytological and ontological investigations. At any rate, the existence of *H. lactarioides* shows that any attempt to transfer the genus *Hygrotrama* from the Hygrophoraceae to the Tricholomataceae is hardly justified.

***Hygrocybe megistospora* Sing., spec. nov.**

Pileo flavo, siccando plus minusve albescente, subsiccato vel post pluvias subviscido, glabro, levi, convexo, dein centro moderatim depresso, 14–20 mm lato. **Lamellis** laete vitellinis vel citrinis, subconfertis vel mediocriter distantibus, subventricosis, moderatim latis vel latis, anguste adnatis. **Stipite** flavo, subtus frequenter albo, haud viscido, glabro, cavo, aequali vel basin aut apicem versus angustato, $26\text{--}54 \times 2.5\text{--}6$ mm. **Carne** albida, inodora, miti.

Sporis dimorphis; macrosporis numerosis, $16.5\text{--}22 \times 11\text{--}14 \mu\text{m}$, contentu oleaginoso repletis, ellipsoideis, levibus, inamyloideis; microsporis paucis, $12\text{--}14 \times 2.5\text{--}6 \mu\text{m}$, ceterum macrosporis similibus. **Hymenio:** Basidiis dimorphis: Macrobasidiis numerosis $62\text{--}99 \times 19\text{--}21.5 \mu\text{m}$, tetrasporis; microbasidiis paucis, $50 \times 10 \mu\text{m}$, tetrasporis. Cystidiis paucis ad aciem, raris ad latera lamellarum, inconspicuis, cylindraceis et ex hyphis tramatis natis, e. gr. $100 \times 7\text{--}12 \mu\text{m}$. **Hyphis** tramatis hymenophorali regularis subintertextis, aliis filamentosis, aliis longis latisque usque ad $180 \times 25 \mu\text{m}$ inter septas metientibus, fibulatis, haud gelatinosis, inamyloideis. **Epicute pilei** cutiformi hyphis externis superficialibus exceptis quae aut filamentosae aut ventricosae sunt et partim subgelatinosae sunt sed stratum definitum ixocutiforme abest. In stipitis superficie hyphae gelatinosae etiam desunt.

Ad terram prope rivulam in silva xerophytica (typi cerrado).

TYPUS—Brasilia, Goiás, Aguas Emendadas Res., 21 I 1978, *Singer B 10560* (INPA).

The extraordinarily voluminous spores and the xerophytic habitat are characteristic.

***Hygrocybe mutabilis* Sing., spec. nov.**

Pileo sordide roseo dein purpureo-roseo ("withered rose" dein "rosevale" M&P), haud sicco sed

hygrophano, flavo in siccis, glaberrimo, levi, vix vel lenissime pellucide striatulo in vegetis, convexo, centro subumbilicato vel subapplanato, 10–16 mm lato. **Lamellis** albis, dein flavescenti-albis, in siccis ochraceo-flavis, sat latis, ventricosus, subdistantibus, anguste vel late adnexis nec non partim subsinuatis. **Stipite** albo, dein pallide flavo apice rubescente, flavo in siccis, glabro, levi, sed frequenter longitudinaliter canaliculato, haud viscido, subaequali vel basin versus attenuato, 13–15 × 3 mm. **Carne** superficiei concolori vel pallidiori, partim pallida, inodora.

Sporis 7.5–12.5 × 4.5–7.5 μm, summopere forma sua variabilibus, ellipsoideis, breviter ellipsoideis, oblongis, ovoideis, triangularibus vel obtuse conicis, depressione suprahilari gaudentibus aut destitutis, lateraliter saepe phaseoliformibus, levibus, pariete homogenero, tenui, inamyloidea praeditis, hyalinis. **Hymenio:** Basidiis (1–)2(–3–)4-sporis, plurimis tetrasporis, sed vix dimorphis, contentu oleaginoso guttulato repletis, clavatis, 35–41 × 6–9.5 μm. Cystidiis veris et pseudocystidiis nullis, sed cystidiolis cum basidiis et basidiolis intermixtis et fasciculatis, contentu optice visibili destitutis, hyalinis, anguste clavatis, 33–35 × 4–6 μm, ad aciem lateraque lamellarum praesentibus sed cheilocystidiis haud differentiatis. **Epicute pilei** cutiformi, haud gelatinosa, hinc inde hyphas simplices ascendentes emittente ad superficiem. Stipitis tegumento nullo, strato gelatinoso absente.

Ad terram inundabilem in silva marginali (typi várzea), anectotrophica.

TYPUS—Brasilia, Amazonas, Laguna Janauari, 21 XII 1978, *Singer B 11465* (INPA).

This species is remarkable among others of section *Coccineae* because the basidia are not dimorphic while the spores are extraordinarily versiform. The habitat is characteristic. *Hygrocybe subcaespitosa* Murr. is related.

Hygrocybe pseudoamylospora Sing., spec. nov.

Pileo aurantiaco (“Navaho” M&P), haud sicco, glabro, per medium radium sulcato, convexo, centro haud depresso sed ± applanato in vegetis, anguste depresso in siccis, ± 9 mm lato. **Lamellis** cremeis, mediocriter distantibus vel distantibus, latis, haud intervenosis nec conspicue furcatis, adnatis, dente decurrente. **Stipite** saturate flavo (“cadmium yellow” M&P), glabro, haud viscido,

aequali, ± 26 × 0.3 mm; mycelio basali haud abundante. **Carne** inodora.

Sporis (4.5–)5–7(–8) × (3.5–)4–5.7(–6) μm, subglobosis, intus minute guttulato-granulosis, pariete inamyloidea vel partim manifeste pseudoamyloidea sed acyanophila, in KOH hyalina, levi vel (simulate?) subpunctulato munitis. **Hymenio:** Basidiis 26–39 × 6.3–8.3 μm, (2–)4-sporis; basidiolis haud fusiformibus. Cystidiolis inter basidia ad aciem lateraque lamellarum praesentibus, ampullaceis, e. gr. 30 × 5.5 μm, apice 2.5 μm diam. Cystidiis ad aciem lateraque lamellarum sparsis, 40–90 × 8–16 μm, ad aciem haud heteromorpham 28–50 × 3–9 μm, omnibus hyalinis, tenuitunicatis, frequenter ultra basidia projicientibus, anguste, rarius late ventricosus, raro aculeo infra-apicali ornatis, apice obtusis. **Hyphis** haud gelatinosis, inamyloideis, fibuligeris, hyalinis atque nonnullis granulatione intracellulari iodii ope aurantiacis repletis. Tramate hymenophorali regulari, ex hyphis subparallelis, nonnullis usque ad 13 μm inflatis efformato. **Epicute pilei** cum hypodermio continua et vix differentia, ex hyphis elongatis, repentibus, appressis, levibus efformata, pigmento aurantiaco intracellulari pallide aurantiaco; dermatocystidiis paucis, cystidiis hymenialibus simillimis, e. gr. 47 × 6.5 μm.

Ad terram in silva tropicali-pluviosa solitario.

TYPUS—30 IV 1973, Ecuador, Tungurahua, Rio Topo, 1450 m alt., 30 IV 1973, *Singer B 7190* (F).

This species is unique because of the pseudoamyloid and at the same time acyanophilic spores, but *Hygrophoropsis* differs in short basidia and many other characters. *Hygrocybe aurantia* (Murr.) Murr., which we have collected in the Amazonas region, is relatively close but differs in inamyloid spores and absence of cystidia.

Hygroaster albellus Sing., spec. nov.

Pileo albo vel brunnescente-albello, in vegetis albo, siccando leniter brunnescente, glabro, levi, sicco, convexo, centro leniter depresso-subumbilicato, 2–2.8 mm lato. **Lamellis** albis, siccando saepe subbrunnescentibus, horizontalibus, distantibus, sat crassiusculis, late adnatis. **Stipite** albo, siccando saepe brunnescente, sicco, glabro, anguste cavo, subaequali vel leniter gradatimque apicem versus attenuato, 7–9 × 0.8–1.1 mm. Mycelio basali fibrilloso, albo. Velo nullo. **Carne** tenui, alba, immutabili, inodora.

Sporis 10–14 × 9.5–13.5 μm (sine ornamentatione: 8–8.5 × 6–7.5 μm), globosis vel subglobosis nec non interdum subheptagonis angulis rotundatis, 15–18 spinis conicis, acutis, 2–3.5 μm altis ornatis, tenuitunicatis, hyalinis, inamyloideis, appendice suprahilari excentrico ± 2 × 0.9 μm. **Hymenio:** Basidiis 33–75 × 11–13 μm, tetrasporis, paucis 1–2–3-sporis, sterigmatibus 10 × 1.5–2.5 μm, basi basidii defibulata. Basidiolis anguste clavatis. Cystidiis et cheilocystidiis nullis. **Hyphis** filamentosis, hyalinis, tenuitunicatis, defibulatis. Hyphis oleiferis numerosis, 3–4.5 μm crassis. Tramate hymenophorali regulari vel laterali (typi Phyllopori), hyphis 2–2.7 μm latis, subintertextis, strato laterali paullum differentiatio. **Epicute pilei** cutiformi, ex hyphis repentibus, applicatis, ± 3 μm latis, tenuitunicatis, levibus, hyalinis, haud gelatinosis efformato et dermatocystidiis destituta. Superficie stipitis structura simili gaudente.

Ad terram argillosam luteam nec non ad lignum putridum in silva terrae firmae primaria, gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, “EMBRAPA,” 3 IV 1978, *Singer & Araujo B 10874* (INPA). Additional collection: same locality, *Singer B 10875* (INPA).

This new species of *Hygroaster* is remarkable because of the absence of pigments and the small size of the carpophores.

TRICHOLOMATACEAE Roze

Podabrella albida Sing., spec. nov.

Pileo cretaceo-albo, opaco, glabro, nudo, convexo, obtuso, haud umbilicato, 7–8 mm lato. **Lamellis** albis, acie integris concoloribus, angustis, confertis, anguste adnaxis vel subadnatis, lamellulis gradatim attenuatis, siccando pallidissime griseolis. **Stipite** albo, subtiliter pruinoso ex toto, aequali, 10–12 × 0.5–0.8 mm; mycelio basali amplo, albo, bombycino, prope stipitem saepe tenuiter membranaceo. **Carne** alba.

Sporis 4–5.2 × 1.8–2.7 μm, plerumque 4 × 2 μm, ellipsoideis vel cylindraceis, levibus, vel subhyalinis in KOH, cyanophilis (moderatim), carminophilis, inamyloideis. **Hymenio:** Basidiis 17 × 4.5–5.5 μm, tetrasporis, siderophilis, atrocaeruleo-granulatis in solutione toluidinica. Cystidiis nullis. Cheilocystidiis numerosis ad ipsam aciem et prope

aciem, quam dermatocystidia plerumque brevioribus, ± 6 μm latis, rarius subcapitatis, cylindraceis, ampullaceis, ventricosis, intus frequenter corpusculis minutis amorphis vel granulosis vel guttulis hyalinis repletio, sed contentu azureo gossypino haud vel vix colorato, parietibus tenuibus, inamyloideis. **Hyphis** elongatis, defibulatis, inamyloideis, tenuitunicatis. Tramate hymenophorali hyalino, regulari, haud gelatinoso. Subhymenio subcellulari, ex elementis minutis subsodiametricis efformato. **Epicute pilei** subcutiformi sed hinc illinc dermatocystidiis numerosis, interdum densis sed haud hymeniformiter dispositis oblecto, dermatocystidiis cystidiis hymenialibus simillimis sed 23.5–50 × 4–6.5 μm et frequenter subcapitatis. In superficie stipitis dermatocystidia simillima pruinae formant.

Ad terram et quisquillas quercinas minutissimas in Querceto (*Q. oleoides* Schlecht. & Cham.) tropicali.

TYPUS—Costa Rica, Guanacaste, near Bagaces, 80 m alt., X 1982, *L. D. Gómez 18718* (F).

In the type of *Collybia alba* Peck the spores are larger (Smith, 1940). This as well as *P. albida* Sing., both with whitish pileus, should be compared with the Asiatic type species of the genus. They can be distinguished by habitat and cystidial characteristics.

Podabrella epipolia Sing., spec. nov.

Pileo griseo (“sphinx” dein 15 L 9 M&P), fuscido-griseo vel murino, centro frequenter obscuriore (e. gr. “coffee” M&P), hygrophano, a centro marginem versus expallente (usque ad “Long Beach” M&P), haud viscido, glabro, convexo, dein partim applanato, saepe centro umbilicato, margine primum incurvo, demum interdum recurvato, 25–42 mm lato. **Lamellis** albidis vel primum cremeis, dein albis vel pallide cremeis, aciem versus plerumque spadiceis vel siccando brunnescentibus, demum ochraceis crenulatisque, angustis vel subangustis, confertissimis, lamellulis abrupte angustatis vel truncatis, liberis vel sinuato-subliberis. Sporis in cumulo rubidis (“Etruscan red” M&P). **Stipite** fuligineo-griseo, subtiliter sericeo sed ad apicem pruinato-fibrilloso, praesertim sub lente, dein plerumque glabrescente, cavo, centrali, saepe longitudinaliter canaliculato, subaequali vel ad basin incrassato at haud bulboso, 45–93 × 1.5–3.5

mm; rhizomorphis albis saepe applanatis vel una basali pseudorhizoidea conspicua notatis. Velo nullo. **Carne** alba, inodora, miti.

Sporis 4.2–7 × 2.8–4.5 μm, ellipsoideis sed nonnullis circumferentia irregulari visis, haud angularibus a polis visis, raro oblongis, inamyloideis, levibus, cyanophilis. **Hymenio**: Basidiis 12–19 × 3.3–6 μm, tetrasporis vel (2–)4-sporis, basidiolis haud fusiformibus, siderophilis (observatio primum a cl. Cléménçon communicata et auctore confirmata!). Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham numerosis, 28–63 × 3.5–4.5 μm, oleocystidiformibus, subulatis vel anguste clavatis vel anguste utrififormibus, rarius filiformibus, pariete tenui, hyalina instructis sed incrustatione crassa sepiacea vel violaceo-brunnea resinacea obtectis quae iodi ope liquificatur. **Hyphis** tenui- vel firme tunicatis, inamyloideis, defibulatis, subfilamentosis, nonnullis latis, 1–25 μm diam., in stipite 3–5 μm latis, parallelis vel subparallelis. Tramate hymenophorali regulari, ex hyphis angustis et sublatis elongatis interdum undulato-flexuosis sed haud gelatinosis efformato, in mediostrato hyphis medio numero latioribus quam in strato laterali. **Epicute pilei** cutiformi, ex hyphis subfiliformibus, repentibus, levibus, haud gelatinosis efformata, in strato supremo interdum hinc inde flexuosis et sparsim diverticulatis. Ad superficiem pilei stipitibus dermatocystidiis nullis.

Ad terram et folia dejecta sarmentaque in silva arenosa terrae firmae, gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10850* (INPA, holotype; LAU, Fung. Clem., isotype). Additional collection: Road Manaus-Caracarai km 45, 11 VII 1977, *Singer B 10084* (INPA).

American species of this genus are not termitophilous. In them cystidia are absent and cheilocystidia numerous; the latter are narrower than in the palaeotropical termitophilous species.

Podabrella poliophax Sing., spec. nov.

A specie praecedente pileo papilla prominente ornato, minore (4–15 mm lato); cheilocystidiis anguste subampullaceis, 4–7.5 μm latis, stipite griseo, minore (37–57 × 0.6–1.7 mm), in parte humo inserta (si exstat) perangustato constanter differt, sed affinis.

In silvis tropicalibus ad terram nudam nec non

in humo profundo (terra firme atque campinarana) gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, (“EMBRAPA”), 18 V 1977, *Singer B 9658* (INPA).

Clitocybe duckeana Sing., spec. nov.

Pileo atrobrunneo (inter “bracken” et “Rembrandt” M&P), vix hygrophano, haud viscido nec pruinoso, sed partim sub lente minime innate fibrilloso, levi vel sublevi vel demum ad marginem leniter striatulo vel subsulcato, convexo, centro obtusissime depresso sed haud umbilicato, ± 32 mm lato. **Lamellis** pallide griseis, horizontalibus, percurrentibus, distantibus sed lamellulis multis insertis, fortiter intervenosis, ad aciem homomorpham integram concoloribus, mediocriter latis, adnatis dente decurrente, in vegetis haud manifeste decurrentibus sed in siccis subdecurentibus. **Stipite** pallide griseo, glabro apice excepto ubi pruinatus est, ad basin pallido, haud viscido, cavo, leniter apicem versus attenuato, ± 55 mm longo, ad apicem 3 mm diam., ad basin usque ad 5.5 mm lato. Mycelio basali sparso, pallido. **Carne** pilei alba, subtenui, stipitis ut minime partim superficiei concolori, inodora.

Sporis 7.5–8.5(–9) × 4.5–5.5 μm, paucis (e basidiis bisporis?) 9–10.5 × 5.5–6 μm, ellipsoideis, leni depressione suprahilari plerumque praeditis, levibus, hyalinis, pariete tenui vel firma, sed haud crassa, et guttulis internis numerosis vel una amorphae praeditis, inamyloideis. **Hymenio**: Basidiis 29–45 × 8.5–9 μm, plerumque tetrasporis, paucis bisporis; basidiolis haud fusioideis. Cystidiis et cheilocystidiis nullis. **Hyphis** elongatis inter septa, filiformibus, multis inflatis (usque ad 28 μm), haud gelatinosis, inamyloideis, fibulatis. Tramate hymenophorali manifeste regulari, haud gelatinoso ex hyphis filamentosis et inflatis paullum intertextis, tenuitunicatis hyalinis efformato. Oleiferis hyphis numerosis, 4–10 μm latis. **Epicute pilei** cutiformi, ex hyphis filamentosis, in KOH subhyalinis et rarius haud manifeste incrustatis, 2.5–3 μm latis efformata; dermatocystidiis veris nullis. Hypodermio ex hyphis etiam cutiformiter dispositis sed pro ratione latioribus efformato, nonnullis ex eis sub epicute endocystidialibus, e. gr. 23–25 × 7–13 μm, ventricosis vel clavatis; pigmento in hypodermio intracellulari vacuolari. Tegumento stipitis extra zonam apicalem nullo, sed ad apicem dermatocystidiis versiformibus pruinam formantibus, his 18–53 × 5–13 μm, frequenter anguste

clavatis vel subcylindraceis vel utriformibus, omnibus tenuitunicatis.

Ad arenas supra terram argillaceam et frustula lignea putrida solitario in silva typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 12 VII 1978. Additional collection: Brasilia, leg. *Maria Sousa, Ermelinda Freire*, comm. *Singer B 11275* (INPA).

This species is closely related to *C. exilis* Sing. In some regards it recalls the genera *Hydropus* and *Gerronema*. The endocystidia are here interpreted as homologous to the inflated elements of subgenus *Cystoclitus*.

Clitocybe exilis Sing., spec. nov.

Pileo albo siccando grisascente-murino, glabro sed sub lente radiatim innate fibrilluloso in nonnullis areis, ceterum haud fibrilloso, convexo, in maturis centro nonnihil depresso vel subumbilicato, in siccis frequenter minute umbilicato, 7–7.5 mm lato. **Lamellis** albis, sublatis, subdistantibus, haud intervenosis, decurrentibus vel adnatis dente decurrente. **Stipite** albo, siccando partim fuscidulo vel griseo, macroscopice levi, glabro, aequali vel leniter attenuato apicem versus, stricto, erecto, sed excentrico vel laterali, 10–12 × 1–1.5 mm. Mycelio basali in substrato sericeo, albo. **Carne** alba, tenui, immutabili, inodora vel subinodora.

Sporis 7.5–11 × 4.5–6(–6.5) μm, plerumque 8.5–9 × 5–5.5 μm, (maioribus forsan e basidiis bisporis natis), ellipsoideis, rarius oblongis, parietibus levibus, tenuibus vel irregulariter subincrassatis, debiliter vel manifeste carminophilis in strato externo, depressione leni vel applanatione suprahilari praesente vel absente, inamyloideis. **Hymenio**: Basidiis 24–37 × 7–8.5 μm, clavatis vel rarius ventricosis, ad basin plerumque fibulatis, (1)–2(–3)–4-sporis, raro uno cum sterigmate grandi centrali e qua duo vel tres sterigmata secundaria postea e furcatione nascunt, haud siderophilis. Cystidiis et cheilocystidiis nullis. **Hyphis** tramatis pilei et hymenophori regularis haud gelatinosis, tenui-cylindraceis vel filamentosis, fibuligeris sed multis septis (secundariis) simplicibus praesentibus, omnibus inamyloideis, in tramate stipitis fibulis magis numerosis, hyphis parallelis, omnibus tenuitunicatis. **Epicute pilei** et hypodermio cutiformibus, ex hyphis filamentosis, saepe leuco-pigmento tenuiter incrustatis, incrustatione in KOH in siccis pallide sordida; cellulis terminalibus ep-

icutis pilei frequenter inflatis, ventricosis vel subclavatis et latis (6.5–12 μm diam.) et corporibus similibus etiam intercalariter inter septa hypharum *Clitocybis hydrogrammae* modo formati. Stipitis superficie in areis tegumento ullo carente, sed in aliis partibus cellulis inflatis inter hyphas intercalatis, aliis cystidiformibus, ventricosis, rarius ampullaceis, superficialibus, 8–27 × 5.5 μm vel minoribus.

Ad truncum arboris dicotyledoneae terra tecum in silva pluviali typi terrae firmae gregatim, immo caespitose.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 6 IV 1977, *Singer B 9618* (INPA).

In the section *Bulluliferae* where this species belongs, it is well characterized by its habitat, habit, spore characteristics, and other minor differences.

Clitocybe polylepidicola Sing., spec. nov.

Pileo argillaceo-griseo vel sordide lurido, glabro, vix minime subviscidulo post pluvias, levi vel brevissime pellucide striatulo, convexo, centro depresso, ± 16 mm lato. **Lamellis** pallidis vel gilvopallidis, angustis, confertis, adnato-subdecurrentibus, in siccis magis decurrentibus. **Stipite** pileo subconcolori, glabro, non radicante, ad apicem leniter angustato, 15 × 3.5 mm, ad apicem 2.5 mm. Mycelio basali sparso alboque, haud strigoso sed filis mycelialibus sparsis, tenuissimis praesentibus. **Carne** subconcolori superficiebus, inodora.

Sporis 5.5–6.5 × 2.3–3 μm, ellipsoideo-oblongis, basi attenuatis, in tetradis conglobatis, levibus, inamyloideis, hyalinis. **Hymenio**: Basidiis 22–23 × 6–6.5 μm, tetrasporis; basidiolis numquam fusoides. Cystidiis cheilocystidiisque nullis. **Hyphis** tramatis pilei hyalinis, inamyloideis, fibulatis, parietibus tenuibus vel usque ad 0.5 μm crassis munitis. Tramate hymenophorali regulari sed paucis hyphis perpendiculariter currentibus vel curvatis, filamentosis, paucis usque ad 7 μm latis. **Epicute pilei** ex hyphis repentibus appressis, ± 2 μm crassis, haud vel vix gelatinisatis efformata. Hypodermio cutiformi; pigmento hic intracellularem tantum, fuscidulo-griseolo, dissoluto, haud inconstante nec intraparietali.

Ad lignum *Polylepidis australis* Bitter solitario.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 10 II 1965, *Singer T 4025* (BAFC).

Polylepis wood is a new habitat for the genus. This species differs from *C. eccentrica* Peck in narrower spores and nonstrigose base of the stipe. *Clitocybe americana* Bigelow differs in colors. These and other related species are not known to grow on rosaceous hosts.

***Lepista collybiiformis* Sing., spec. nov.**

Pileo uniformiter sordide cinnamomeo, hygrophano, pallescente sed in siccis colore originali gaudente, glaberrimo, breviter striatulo ad marginem sed levi, convexo, umbonato, marginem versus demum applanato vel subconcasto, ± 22 mm lato. **Lamellis** albis vel albidis, moderatim latis, subconfertis, intervenatione sparsa, adnatis denteque decurrente. **Stipite** sursum albo, in tertia basali pallide ochreo, glaberrimo, subaequali vel minime attenuato apicem versus, $\pm 26 \times 1.5$ mm, ad apicem 1 mm lato. Mycelio basali himantiformi, albo.

Sporis $5-5.5 \times 3-3.5$ μm , paulis maioribus, verrucosis, verrucis tantum cyanophilis, stramineis (KOH), ellipsoideis, inamyloideis. **Hymenio:** Basidiis $18 \times 5.5-6$ μm , tetrasporis. Cystidiis nullis, sed prope aciem nonnullis basidiolis irregularibus (cystidiolis?) interspersis. **Hyphis** hyalinis, inamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** cutiformi, hyphis lenissime intertextis, filamentosis, pigmento intracellulari et minutissime vix manifeste incrustante, pallide grisello-cinnamomeo (NH₄OH). Hypodermio vix differente.

Ad folia delapsa tenacia in silva arenosa (campinarana) solitario.

TYPUS—Brazil, Amazonas, road Manaus-Cacaraí, km 45, 3 VIII 1978, leg. *Ermelinda Freire*, comm. *Singer B 11347* (INPA).

***Tricholomopsis elatipes* Sing., spec. nov.**

Pileo atrofusco vel atrobrunneo (8 E/H 11 M&P) e squamulis marginem versus densioribus et hac de causa centro nonnihilo minus atro quam margo, in centro inter squamulas dilutiore, ceterum levi, sicco, convexo, sed centro infundibuliformi, ± 60 mm lato. **Lamellis** albidis, latis (± 10 mm), ad aciem plus minusve laceratis, distantibus vel subdistantibus, subarcuatis, emarginatis sed dente decurrente. **Stipite** fusco ("olive wood" M&P), sicco, albo-sericeo ex toto, cavo, strictissimo et admod-

um elongato, aequali, usque ad 185×10 mm. Mycelio basali sparso. Velo nullo. **Carne** alba, immutabili. Odore nullo. Sapore miti vel minime piperato.

Superficiebus pilei stipitisque KOH et H₂SO₄ ope subimmutabilibus.

Sporis $7.5-9 \times 5.2-5.5$ μm , ellipsoideis, latus ad adaxiale minus convexus quam ad latus abaxiale, hyalinis (NH₄OH), inamyloideis, acyanophilis, levibus. **Hymenio:** Basidiis $27.5-31(-47) \times 9-9.5$ μm , tetrasporis, rarissime bisporis; basidiolis anguste clavatis vel cylindricis. Cystidiis ad aciem lamellarum et ad latera similibus, sat numerosis, $55-82 \times 10.2-16.3$ μm , ventricosos-utriculiformibus vel ventricosos-subampullaceis, interdum minute apicaliter mucronatis, generatim obtusis, frequenter simpliciter ventricosus vel ventricosos-clavatis, maioribus sed haud conspicuis, paullum vel haud projicientibus quamquam frequenter longe pedicellatis, intus minutissime guttatis vel corpusculis guttatis vel amorphis azureo cressylicis haud metachromaticis repletis, tenuitunicatis. **Hyphis** fibulatis numerosis sed septis simplicibus haud raris, praesertim in epicute et hypodermio, omnibus inamyloideis, haud gelatinosis. Tramate hymenophorali regulari, hyphis hyalinis, tenuitunicatis $2-11$ μm latis vel magis inflatis. **Epicute pilei** fragmentis trichodermialibus efformata, his squamulas formantibus et ex hyphis inter se parallelis ascendentibus efformatis, in parte palisadicis, cellulis terminalibus vix differentiatas, apice rotundato-obtusis. Hypodermio profundo, cutiformi, hyphis sublatis et latis, elongatis, horizontalibus, $1.8-26$ μm latis, pariete tenui, hyalina praevisis, cellulis interdum sat brevibus (e. gr. 21×17 μm). Pigmento cellularum epicutis et hypodermii intracellulari, vacuolari, frequenter colloidally condensato, biso vel spadiceo; pigmentum simile in cortice stipitis. Tegumento stipitis e cellulis elongatis strati corticalis terminalibus inflatis et dermatocystidiis superficialibus $77-130 \times 6-8.7$ μm , hyalinis, subfilamentosis vel anguste ampullaceis, obtusis efformato.

Ad terram argillosam luteam silvae terrae firmae primariae solitario, raro.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 23 VI 1977, *Singer & Araujo B 10006* (INPA).

This rare species grows on the earth and is remarkable because of its long, straight stipe. It is related to *T. elata* Hongo from Japan.

Tricholomopsis tricholomatoides Sing., spec. nov.

Pileo vegeto colore Lactarii lignyoti gaudente, siccando "Hudson seal" (M&P) approximante, in vegetis velutino, in siccis sub lente tomentosovellereo, sed haud radiatim fibrilloso nec squamuloso, margine primum incurvo, convexo, haud umbilicato neque umbonato, demum in centro late applanato vel leniter depresso, 19–45 mm lato.

Lamellis albidis vel albo-cremeis, confertis, nonnullis furcatis, intermixtis, latis, demum manifeste intervenosis, adnato-subdecurrentibus, haud vel vix sinuatis. **Stipite** pallide griseo-fusco sed ad apicem extremum albidopallido, dein ex toto pallide griseo-fusco, sicco, subvelutino-opaco, solido vel farcto, ad basin rotundato (haud radicante), aequali vel leniter apicem versus attenuato, 30–35 × 7–9 mm. Mycelio basali albo. Velo nullo. **Carne** alba, in siccis interdum albo-grisello-marmorato, immutabili, haud lactescente. Odore et sapore fortiter farinaceo.

Sporis 7.5–10 × 4.3–6 μm, ellipsoideis, levibus, pariete sat tenui, haud carminophila, inamyloidea, acyanophila munitis, callo poroque apicalibus destitutis. **Hymenio:** Basidiis 29–39(–60) × 7.5–10 μm, tetrasporis, granulatione siderophila destitutis, ad basin fibulatis. Basidiolis clavatis. Cystidiis 27–57 × 5.5–9.5 μm, fusoides, apice subacutis vel frequentius obtusatis vel minute mucronatis, rarius in parte inferiore cylindraces et in medio superno tantum subfusoides, raro anguste clavatis, tenuitunicatis, hyalinis, haud vel moderatim projectantibus ultra basidia, aequaliter vel profundius natis quam basidia. Cheilocystidiis ad aciem lamellarum heteromorpham bene differentiatas, 32–48 × 4–7 μm, plerumque anguste ventricosis, sub apicem capitatum (capitulo 2–3 μm diam.) filiformibus et 1–1.5 μm diam., rarius utrififormibus et ad constrictionem ± 3 μm diam., hyalinis, ita ut cystidia contentu visibili destituta sint. **Hyphis** plerumque filamentosis (haud "sarcodimitice" dispositis), haud gelatinosis, inamyloideis, fibulatis, tenuitunicatis, 2–7 μm latis; hyphis oleiferis sat numerosis 5–5.5 μm latis. Tramate hymenophorali regulari, ex hyphis subparallelis composito; subhymenio bene evoluto. **Epicute** profunda pilei trichodermiali, cellulis terminalibus aut hyphalibus aut cystidioideis; his dermatocystidiis pleurocystidiis hymenophori simillimis, singularibus vel dense subhymeniformiter conglobatis, nonnullis hyalinis sed multis pigmento vacuolari aeque dissoluto vel rarius paullum colloidaliter condensato fusco vel sepiaceo repletis sed incrustatione nulla, parietibus hyalinis. Hy-

podermio vix differentiato, dispositione minus trichodermiali tantum discernibili. Tegumento stipitose ei pilei simili. Pigmento iodii ope ferrugineo-brunneo.

Ad terram in silva tropicali inundabili typi várzea sed interdum aqua nigra invasa, gregatim.

TYPUS—Brazil, Amazonas, Ilha Januári, 18 III 1983, *Singer B 12429* (F).

This species belongs in the section *Platyphyllae*. It differs amply from all species of *Oudemansiella* and has the tricholomatoid habit of *Tricholomopsis*. Our new species rather recalls the more fleshy species with inamyloid spores in *Hydropus*, but the structure of the epicutis is different. *Tricholomopsis* is represented in the neotropics by *T. tricholomatoides*, *T. subdecorosa* (Murr.) A. H. Smith (growing nearby in similar conditions, *Singer B 11459*, INPA), and *T. totilivida* (Murr.) Sing. (in secondary terra firma forest at Manaus, *Singer B 9844* and *9908*, INPA).

Tricholoma moseri Sing., spec. nov.

Pileo nigro-squamoso, inter squamas griseo et siccando albescente, interdum sparse rimoso, sicco, haud sulcato, conico, dein conico-convexo, ± 25 mm lato. **Lamellis** cinereo-albidis, confertis, sat latis, sinuatis. **Stipite** albo, glabro, levi, siccando demum sordescente, haud radicante, cavo, aequali, ± 22 × 5 mm. Velo nullo. **Carne** alba, inodora, insipida in siccis.

Sporis 7.3–8.8 × 3.3–4.3 μm, ellipsoideis vel oblongis (Q = 1.8–2.2), hyalinis, levibus, inamyloideis. **Hymenio:** Basidiis 2–4-sporis, plerumque tetrasporis, 28–29 × 7.5 μm, inamyloideis, sed paucis bisporis pseudoamyloideis. Cystidiis nullis, sed cystidiolis versiformibus praesentibus, e. gr. 25 × 6.5 μm et utrififormibus, hyalinis, tenuitunicatis. **Hyphis** inamyloideis, defibulatis, haud gelatinosis. Tramate hymenophorali regulari. **Epicute pilei** cutiformi, hyphis 5–14 μm latis, appressis vel ascendentibus (in squamis ascendentibus). Hypodermio paullum differentiato, cutiformi, ex hyphis pro ratione subangustioribus efformato. Pigmento hypharum epicutis hypodermiique intracellulari, dissoluto umbrino.

Ad terram sub *Pinis hartwegii* Lindl.

TYPUS—Mexico, Paso de Cortés, near upper limit of *Pinus* at 4100 m alt., 23 VII 1969, *Singer M 8521* (F).

This species belongs in the section *Tricholoma*, but it is ambiguous between stirps *Terreum* and stirps *Atrosquamosum*. Its affinities with species of these groups can be definitely established only after the taste of the fresh carpophores and the formalin reaction become known. Mexican mycologists will be able to provide the missing data since at the type locality only one species of this section occurs.

Armillariella affinis Sing., spec. nov.

Pileo brunneo, centro minute brunneo-squarrosulo, ceterum subnudo, subviscido, per medium radium pellucide striato et siccando levi vel subsulcato, convexo, obtuso, mox appanato vel centro subdepresso, 29–31 mm lato. **Lamellis** alutaceo-pallidis, dein brunneolo-pallidis, ad aciem frequenter brunnescentibus, confertis, horizontalibus, decurrentibus. Sporarium massa cremeo-alba (inter Ia et Ib Romagnesi), dehydratatione cremeis (Ib). **Stipite** supra annulum lamellis concolori, subtus brunneo, dein subfuligineo, superficialiter albo-sericeo, aequali bulboque destituto, rarius ad apicem minime attenuato, $42-43 \times \pm 4$ mm, ad apicem plerumque 3 mm diam., saepe prope basin furcato-duplicato. Velo annuliformi, albo, tenuiter membranaceo, non manifeste cortiniformi, ad marginem anteriorem lacero. Rhizomorphae nigrae prope basin haud visae. **Carne** pallida, in cortice stipitis subconcolori superficie. Odore nullo vel subnullo. Sapore submiti (post masticationem tarde lenissimeque adstringente).

Sporis $(6.5-7-8(-9)) \times (4.5-4.7-5.5(-6)) \mu\text{m}$, ellipsoideis, nonnullis ovoideis, sub immersione levibus, parietibus usque ad $0.5 \mu\text{m}$ incrassatis in maturis, hyalinis, paucis leniter brunnescentibus (KOH), inamyloideis. **Hymenio**: Basidiis $24-26.8 \times 5.5-7.2 \mu\text{m}$, ad basin defibulatis, hyalinis, paucis flavidis, omnibus tenuitunicatis (sclerificatis nullis). Cystidiis nullis, sed elementis subhymenii interdum elongatis et inter basidia intercalatis, brunneis, fusoides, perpaucis, e. gr. $15 \times 2.5 \mu\text{m}$. Cheilocystidiis ad aciem heteromorpham numerosis, $20-32 \times 6-9.5 \mu\text{m}$, fusoides vel ventricosis vel subclavatis, hyalinis, tenuiter vel firme (haud crasse) tunicatis. **Hyphis** defibulatis, inamyloideis. Tramate hymenophorali bilateralis, mediostrato ex hyphis hyalinis, haud gelatinosis, subparallelis, $5-14 \mu\text{m}$ latis efformato et $30-50 \mu\text{m}$ diametro. Strato laterali gelatinoso, ex hyphis recurvatis tenuioribus (usque ad $5 \mu\text{m}$ latis), elongatis, hyalinis efformato. Subhymenio subcellulari, nonnullis elementis prope hymenium brunneolis (saepe pig-

mento intraparietali gaudentibus), his $4-4.5 \mu\text{m}$ diam. **Epicute pilei** cutiformi vix vel paullum gelatinosa, ex hyphis subparallelis, defibulatis efformata, his tenuiusculis sed nonnullis ventricosis et $7-13 \mu\text{m}$ latis; supra epicutem (in tegumento squarrosulo) hyphis fasciculatis ascendentibus, his hyphis ex catenulis cellularum elongatarum sed pro ratione brevium, $11-17 \mu\text{m}$ latarum efformatis. Pigmento in omnibus, his et illis, praecipue intracellulari, vacuolari sed in paucis cellulis etiam intraparietali, immo tenuiter incrustante, cinnamomeo.

Ad lignum emortuum truncorum quercinorum et alneorum, caespitose.

TYPUS—Costa Rica, Heredia, Varblanes near Hacienda “Tyrol,” 11 VI 1984, *Singer B 14615* (F).

This species belongs to the stirps *Mellea* and has been observed only in the tropical-montane zone of Central America. It differs from *A. polymyces* (Pers. ex Gray) Sing. & Clem. in paler spore print, somewhat smaller carpophores, no distinct ixocutis in the cuticle of the pileus and the shape and size of the cheilocystidia. Although Romagnesi's (1983) key leads to *A. mellea* (Fl. D. ex Fr.) Karst., our species differs from the latter in many characters. *Armillaria borealis* Marxmüller has frequently clamped basidia, larger carpophores, and pure white spore print; ochraceous to yellow colors frequently occur on the surfaces of the pileus and stipe.

Armillariella viridiflava Sing., spec. nov.

Pileo pallide olivaceo centro atro-olivaceo, fibrillis minutis ex toto oblecto, dein olivaceo, centro fibrilloso, atro-olivaceo, ceterum denudescente et per tertiam vel mediam partem radii hygrophano, margine extremo saepe albido, per 3–9 mm marginales pellucide striatulo, sed dein estriato, exciccatione subcinnamomeo sed sicco atrofusco (“winterleaf” M&P, sed atriore) ad marginem, brunneoatro in centro (“autumn” M&P), haud viscido, centro plerumque ruguloso, campanulato-convexo dein convexo, umbonato, demum interdum subappanato, 30–64 mm lato. **Lamellis** albis, dein flavidis et frequenter acie ferruginascentibus, confertis, mediocriter latis, decurrentibus. Sporis in massa ante desiccatione ulla pallide cremeis (Romagnesi Ib vel Iia, exciccatione Iia vel Iib, i.e. flavidulis). **Stipite** albo, dein albidulo vel rutilescence-albo, mox e basi apicem versus cin-

namomeo vel olivaceo-brunneo, sicco \pm cacaolori ("cacao" M&P), superficialiter fibrillulis haud densis olivaceo-flavidis ornatis, ad apicem leniter longitudinaliter sulcolato, solido, dein farcto, subaequali vel (si dense fasciculatim crescens) basin versus acuminato-attenuato, $80\text{--}125 \times 9\text{--}11.5$ mm. Velo apicali, bene evoluto et persistente, crassiusculo-membranaceo, prope superficiem stipitis tantum subcortiniformi, flavido, rarius albo et saepe partim flavido. Mycelio basali albo. Rhizomorphis nigris prope basin stipitis sparsis vel raris. Carne alba, dein brunnea in parte inferiore stipitis, fractu carne-brunnescente in lamellis et in annulo, carnosa. Odore debili, haud notabili. Sapore miti sed post masticationem prolongatam leniter styptico-adstringente, demum iterum miti.

Sporis $6.2\text{--}8.5 \times 4.5\text{--}5.5(-6) \mu\text{m}$, ellipsoideis, sub immersione levibus, pariete interdum usque ad $0.3 \mu\text{m}$ incrassata, inamyloidea, hyalina praeditis, contentu interdum in KOH flavescentibus. **Hymenio:** Basidiis $(16\text{--})21.8\text{--}31.8 \times (6\text{--})6.7\text{--}9(-10) \mu\text{m}$, (2-)4-sporis vel omnibus tetrasporis, nonnullis usque ad $45 \mu\text{m}$ longis, multis ad basin fibulatis, pariete tenui vel vix incrassatis, basidiis sclerificatis haud visis. Cystidiis nullis. Cheilocystidiis numerosis ad aciem heteromorphiam, $(15\text{--})24\text{--}32(-70) \times (3\text{--})6\text{--}10(-12) \mu\text{m}$, versiformibus, sed plerumque cylindratis vel fusoides vel ventricosis, nonnullis utrifurcatis vel ampullaceis, frequenter capitulatis, rarius apice effilatis, plerumque obtusis, tenuitunicatis, hyalinis vel subhyalinis. Nonnullis basidiis contentu plasmatico destitutis sed corpusculo uno vel duobus colorabilibus nec non septis secundariis transversis instructis sed haud sporulantibus, fibula basali plerumque munitis. **Hyphis** defibulatis, inamyloideis, haud gelatinosis. Tramate hymenophorali subregulari-bilaterali sed strato laterali gelatinoso destituto. Subhymenio subcellulari, elementis minutis. **Epicute pilei** strato gelatinoso destituta, in fibrillis superficialibus ascendentibus cellulis pro ratione brevibus. Pigmento in KOH lenissime, tenuissime incrustante sed plerumque intracellularem, aurantiaco-fulvo vel fulvo-brunneo.

Ad ligna truncorum Dicotyledonearum e. gr. Cistacearum et Rosacearum, fasciculatim vel dense gregatim.

TYPUS—Spain, Catalonia, mountains near Tossa, 24 X 1979, *Singer C 9601* (F). Additional collection: Austria, Wien, Floridsdorf, 7 X 1979, *Singer C 9556* (wu).

This species is likely to be identical with *Agar-*

icus melleus var. *viridiflavus* Barla. It is characterized by cream-yellowish spore print, nongelatinized hymenophoral trama, almost mild taste, clamp connections rather frequent at the base of the basidia, the olive to olive-blackish color of the pileus, the lamellae which stain flesh-brownish when injured (as does the annulus), and seems to be remarkable additionally by a more southern area of distribution and the host range.

***Omphalina infumata* Sing., spec. nov.**

Pileo olivaceo-brunneo, inter strias pallido, glabro, pellucide striato, convexo, obtuso vel umbone exiguo et humili praedito, $14\text{--}19$ mm lato. **Lamellis** flavidulis, distantibus, sublatis, decurrentibus. **Stipite** ad apicem brunneo, subtus pallidior vel cremeo-pallido, macroscopice subglabro, aequali, $20\text{--}30 \times 1\text{--}1.5$ mm. Mycelio basali albo. **Carne** pallida vel subalbida, inodora. Basi stipitis lichenisata vel ut minime algas ferente.

Sporis $7.5\text{--}9 \times 4.5\text{--}5.5 \mu\text{m}$, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $34.5\text{--}43 \times 7.5\text{--}9 \mu\text{m}$, (3-)4-sporis. Cystidiis nullis. Cheilocystidiis $28\text{--}35 \times 3\text{--}4 \mu\text{m}$, angustissime clavatis vel subfilamentosis, nonnullis capitatis vel ad apicem furcatis. **Hyphis** defibulatis. Tramate hymenophorali irregulari, hyalino. **Epicute pilei** cutiformi, sed laxe dispositis hyphis, nonnullis terminalibus ascendentibus et frequenter cystidiformibus, tunc cheilocystidiis et dermatocystidiis piliformibus stipitis simillimis, nulla in parte gelatinosis consistente. Tegumento stipitis e pilis vel dermatocystidiis efformato, his $20\text{--}83 \times 4\text{--}7 \mu\text{m}$, anguste clavatis vel subcylindratis vel ampullaceis, hyalinis. Pigmento melleo, subfuscido, incrustante.

Ad truncum piceinum putrescentem.

TYPUS—ČSSR, Slovakia, between Kežmarsko and Kežmarské Zlaby, 7 IX 1974, leg. *Singer & Kuthan*, comm. *Singer C 5921* (F).

This species is likely to be identical with *Agaricus infumatus* Berk. & Br., but since no type has been available for comparison, we described it as a new species; it is quite remarkable because of its colors which in sect. *Defibulatae* do not seem to occur among well-defined species.

***Gerronema albogriseolum* Sing., spec. nov.**

Pileo albogriseolo vel griseoalbo, siccando albo vel albedo, sub lente partim albisericeo sed mac-

roscopice ex toto glabro in vegetis, convexo, centro applanato, ± 8 mm lato. **Lamellis** albis, subdistantibus (14 percurrentibus), latis, ad aciem integris et lateribus concoloribus, adnatis vel subsinuato-adnatis, haud decurrentibus. **Stipite** albo, glabro, ad apicem attenuato, $12-13 \times 1.5$ mm, ad apicem $0.8-1$ mm lato. Mycelio basali sericeo, albo. **Carne** alba, immutabili, inodora.

Sporis $5-6 \times 3.5-4 \mu\text{m}$, plerumque $5.5 \mu\text{m}$ longis, ellipsoideis vel breviter ellipsoideis, depressione suprahilari destitutis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $21-28.5 \times 6-6.5(-7.5) \mu\text{m}$, 2-4-sporis, plerumque tetrasporis. Cystidiis nullis. Cheilocystidiis sparsis et inconspicuis, filamentosis, frequenter furcatis, $1.5-2.5 \mu\text{m}$ latis, obtusis, sed prope marginem pilei pilis cystidiformibus praesentibus, his $36 \times 5 \mu\text{m}$, ad basin $\pm 9 \mu\text{m}$ latis, tenuitunicatis, apice cylindraceis, hyalinis, sparsis. **Hyphis** defibulatis, inamyloideis, haud gelatinosis. Tramate hymenophorali regulari, in parte centrali ex hyphis nonnihil inflatis (usque ad $10 \mu\text{m}$) efformato, ceterum filamentoso (hyphis $2.5-3 \mu\text{m}$ diam.), hyalino. **Epicute pilei** cutiformi ex hyphis filamentosis efformata, sed supernis saepe ascendentibus vel recurvatis, interdum intertextis, sed generatim sparsis prociendentibus et tegumentum tenue sericeum formantibus, nonnullis ex eis interdum moniliformibus, tenuitunicatis, omnibus $2-2.5 \mu\text{m}$ latis et in KOH hyalinis.

In vegetatione typi campinaranae ad lignum putridissimum solitario.

TYPUS—Brazil, Amazonas, road Manaus-Caracará, km 125, 20 VII 1978, *Singer B 11291* (INPA).

This species is related to *G. albidum* (Fr.) Sing. and *G. alutaceum* Sing., both belonging in sect. *Gerronema*.

Gerronema bethlehemicum Sing., spec. nov.

Pileo atrogriseo vel fuligineo-griseo ("biskra" vel "bronze Br" M&P), in sulcis murino (14 F 5 M&P) demum fusco-brunneo ("Cochin" M&P), glabro, ad marginem sulcato, centro plerumque venoso-rugoso, convexo, dein margine applanato, demum concavo centro leniter vel profunde infundibuliformi, ± 40 mm lato. **Lamellis** flavido-griseolis ("fallow" vel 11 G 2 M&P), distantibus, satis angustis, leniter intervenosis in vetustis, vix aut non intervenosis in junioribus, decurrentibus; superficie interlamellari grisea. **Stipite** albo, gla-

bro, aequali, longitudine diametro pileo plerumque subaequali, 2.5 mm diam., haud insititio.

Sporis $6.5-9 \times 4.5-5.2 \mu\text{m}$, plerumque $6.7-8 \times 4.5-5 \mu\text{m}$, ellipsoideis, depressione suprahilari debili vel nulla, pariete levi, hyalina, inamyloidea munitis. **Hymenio:** Basidiis $7.5 \mu\text{m}$ latis, tetrasporis. Cystidiis cheilocystidiisque nullis. **Hyphis** fibulatis; tramate hymenophorali regulari, inamyloideo. **Epicute pilei** cutiformi, dermatocystidiis haud differentiatas.

Ad lignum emortuum in silva inundabili.

TYPUS—Brazil, Pará, Belem, 10 VI 1966, *Singer B 4274* (BAFC).

This new species had formerly been thought to be conspecific with *G. strombodes* (Berk. & Mont.) Sing. but is certainly different although related.

Gerronema candidum Sing., spec. nov.

Pileo candido, macroscopice glabro, sed sub lente sericeo-subtomentoso vel sericeo-puberulo, levi, haud viscido, margine initio incurvo, convexo, umbilicato, $3.5-15.5$ mm lato. **Lamellis** albis, subconfertis vel subdistantibus, sat latis vel satis angustis, haud intervenosis, adnato-decurrentibus vel decurrentibus. **Stipite** albo, subglabro vel subtiliter sericeo-puberulo ut pileus, levi, haud viscido, cavo, aequali, $11.5-29 \times 0.6-1.8$ mm. Mycelio basali gossypino et/aut tenuissime rhizomorphico, albo. **Carne** alba, immutabili, molli-carnosa, inodora, KOH ope ut superficies pilei aquose sordideque ochracea.

Sporis $4-4.5 \times 3-3.8 \mu\text{m}$, e. gr. $4.5 \times 3.5 \mu\text{m}$ aut $4.5 \times 3.8 \mu\text{m}$, breviter ellipsoideis vel subglobosis, plerumque breviter ellipsoideis, depressione suprahilari destitutis, levibus, haud angularibus, pariete homogenea, levi, hyalina, inamyloidea et guttula olei globosa institutis. **Hymenio:** Basidiis $18-21(-24.5) \times 4.5-6 \mu\text{m}$, tetrasporis; basidiolis haud fusiformibus. Cystidiis et cheilocystidiis nullis. **Hyphis** in pileo et stipite inamyloideis, haud gelatinosis, defibulatis, sublaxe dispositis, in pileo plerumque subintertextis, in stipite parallelis, hyalinis, saepe multiseptatis, perpaucis inflatis usque ad $20 \mu\text{m}$ diam. Tramate hymenophorali regulari, interdum typi Clitocybis. **Epicute pilei** cutiformi sed hyphis superficialibus cellulas hyphales vel pili- vel cystidiformes emittentibus quae filamentosae ad frequenter curvatae vel flexuosae sunt et, si cystidiformes, anguste utrifformes evadunt, omnes hyphae tenuitunicatae

et hyalinae, 23–42 × 2.5–5 µm. Tegumento stipitis simili, exrescentiis minus densis, saepe longioribus 24–60 × 2.5–4.5 µm, nonnullis subtiliter hyalino-incrustatis.

In solo arenoso et ad frustula lignea nec non ad terram argillosam in silva typi terrae firmae, solitario.

TYPUS—Brazil, Amazonas, road Manaus-Caracará, km 45, 10 VIII 1978, *Singer B 11372* (INPA). Additional collection: same locality and date, *Singer B 11375* (INPA).

This species, belonging to sect. *Gerronema*, is close to *G. albidum* (Fr.) Sing. and *G. albogriseolum* Sing. from which it differs in snow white pileus and shorter spores. The smaller forms of *G. candidum* may easily be confused with species of *Hemimycena* in the field, but they differ in the hyphal structure and the absence of clamp connections.

***Gerronema costaricense* Sing., spec. nov.**

Pileo citrino vel luteo, sicco pallidior, partim demum brunnescente, hygrophano, glabro, haud viscido, levi, partim innate fibrilluloso sub lente in siccis, convexo, centro anguste depresso, 30–34 mm lato. **Lamellis** pileo concoloribus, confertis vel subdistantibus, fortiter intervenosis, angustis vel mediocriter latis, adnatis vel decurrentibus. **Stipite** pileo concolori, siccando et sicco pallide flavo, levi, glabro, sicco, aequali, 36–38 × 2–2.5 mm. Mycelio basali abundante, albo. **Carne** inodora, miti.

Sporis 5.3–6.8 × 4.3–5.8 µm, e. gr. 6.5 × 5.3 µm aut 6 × 5.2 µm, breviter ellipsoideis vel subglobosis, levibus, in KOH intus saepe subflavescentibus, amorphe vel globoso-guttatis, inamyloideis. **Hymenio**: Basidiis 22–29 × 5.5–7.5 µm, tetrasporis. Sterigmatibus ± 6 µm longis. Cystidiis veris nullis sed cheilocystidiis ad et prope aciem lamellarum numerosis, 30–52 × 6.5–9 µm, utriforibus vel ampullaceis, rarius clavatis, nonnullis unum ad latus exrescentia obliqua gaudentibus, apice (in ampullaceis breviusculo) obtusis. **Hyphis** fibulatis, inamyloideis. Tramate hymenophorali regulari, haud gelatinosa, ex hyphis elongatis maxima e parte filamentosis, tenuitunicatis, hinc illinc inflatis, 4–16 µm latis, moderatim longis inter septa efformato, subintertexto, hyalino vel partim fulvido, hic nec non in hypodermio pigmento neque incrustante neque manifeste intraparietali. **Epi-**

cute et hypodermio similibus, cutiformibus, in epicute ex hyphis 2–5 µm latis, praecipue hyalinis, in hypodermio ex hyphis 2.5–9 µm latis, magis fulvidis efformatis. Dermatocystidiis nullis.

In silva tropicali-montana ad lignum putridissimum gregatim sub arboribus dicotyledoneis.

TYPUS—Costa Rica, Heredia, above San José de la Montaña, Porrosati, 1900 m alt., 29 VI 1981, *Singer B 12520* (F).

From the South American *G. retiarium* (Berk.) Sing., this species can be distinguished mainly by the broader spores.

***Gerronema daguense* Sing., spec. nov.**

Pileo saturate griseo vel umbrino, vix hygrophano, innate radiatim fibrilloso vel fibrillis innatis vix visibilibus, per tertiam partem radii vel per medium radium sulcato et pellucide striato, haud viscido, convexo, umbilicato, ± 15 mm lato. **Lamellis** albis, subdistantibus, angustis, haud intervenosis, adnato-attenuatis vel subdecurrentibus. **Stipite** pallide griseo, glabro macroscopice, levi, cavo, verticali sed excentrico, aequali vel subaequali, ± 17 × 1.3 mm. Mycelio basali albo, strigoso, radiato. **Carne** albo, inodora.

Sporis 5.5–7.5 × 3.5–4.3 µm, ellipsoideis vel ellipsoideo-subamygdaliformibus, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 17–21 × 6.5–7 µm, tetrasporis. Cystidiis praesentibus sed admodum sparsis, inconspicuis, ± 27 × 3–3.5 µm, subbulatis, tenuitunicatis, hyalinis. Cheilocystidiis ad aciem haud heteromorpham pleurocystidiis similibus vel pluries ampullaceis, 28–31 × 3–7.5 µm. **Hyphis** fibulatis, haud gelatinosis, hyalinis, inamyloideis, in stipite parallelis et subhyalinis. Tramate hymenophorali regulari. **Epicute pilei** cutiformi, ex hyphis filamentosis levibus efformata, perpaucis dermatocystidiis eis stipitis simillimis praesentibus. Dermatocystidiis stipitis moderatim numerosis, 12–20 × 3.5–4.5 µm, cystidiis hymenialibus plerumque minoribus et forma magis irregularibus, tenuitunicatis.

Ad folium Melastomatacearum mortuum in silva tropicali-montana solitario.

TYPUS—Colombia, El Valle, Corr. El Vergel, Dagua, 14 IV 1960, *Singer B 6123* (F).

This species may be erroneously classified as *Hydropus* but differs from that genus by a number

of microscopical characters. If compared with the species of *Hydropus*, sect. *Floccipedes*, it differs from all species in narrower spores, cystidia, and dermatocystidia as well as in mainly filamentous tramal hyphae. It belongs in sect. *Xanthophylla* of *Gerronema* and can be distinguished from *G. leptosarcum* Sing. by the size of the carpophores and their habit, and also by narrower spores, nonintervenose lamellae, and the exact structure of the covering of pileus and stipe.

***Gerronema flammeum* Sing., spec. nov.**

Pileo rubro, glabro vel leniter (sub lente) radiatum innate fibrilluloso, haud viscido sed interdum luride expallente praecipue in centro, levi vel breviter sulcato, convexo, centro depresso, 2–8 mm lato. **Lamellis**, rubris vel aciem versus flavo-flammeis vel flavidis, latis, subdistantibus vel distantibus, adnato-subdecurrentibus vel decurrentibus. **Stipite** rubro, sicco, glabro, levi, aequali, tenui, 22–35 × 0.3–1 mm. **Carne** subconcolori, immutabili, tenui, inodora.

Sporis (5–)7.5–11.5 × (3–)4–7.3 μm, plerumque 7.5–10 × 5–6.5 μm, ellipsoideis, levibus, inamyloideis. **Hymenio**: Basidiis 22–37 × (6–)6.5–11 μm, bi- vel tetrasporis, variabilibus sed haud dimorphis, sed interdum omnibus bisporis. Cystidiis et cheilocystidiis nullis. **Hyphis** fibulatis, inamyloideis, azureo cresylico haud metachromaticis, haud gelatinosis. Tramate hymenophorali regulari, ex hyphis satis angustis nec non inflatis usque ad 15 μm efformato. **Epicute pilei** ab hypodermio aegre differentiatia, in KOH et NH₄OH aurantiaca, dum hyphae tramatis pilei subhyalinae permanent, cutiformi, ex hyphis levibus efformata, hyphis erectis superficialibus et dermatocystidiis nullis. Stipitis vestimento a tramate stipitis ex hyphis longitudinaliter dispositis haud differentiatio.

Ad terram nigram et argillosam et arenosam, saepe particulis adustis ligneis intermixtam in silva tropicali pluviali typi terrae firmae vel campinaranae primaria et secundaria passim.

TYPUS—Brazil, Amazonas, road Manaus-Caracará, km 106, 4 IV 1978, *Singer B 10916* (INPA). Additional collections: same locality, 24 III 1978, *Singer B 10861* (INPA); from 30 km N of Manaus, 21 IV 1977, *Singer B 9766* (INPA). Both these collections are apparently identical.

This species is somewhat similar to some hygrocybes, especially *H. trinitensis* Pegler, and can

be easily taken for that species in the field. However, it does not seem related because the basidia are neither dimorphic nor five or more times longer than the longitudinal axis of the spores. Therefore we prefer to insert it in sect. *Romagnesia* subsect. *Porporhora* of *Gerronema*.

***Gerronema laccarioides* Sing., spec. nov.**

Pileo pallide roseo, albicante vel subalbicante in adultis, haud viscido, hygrophano, glabro, levi, convexo, umbilicato, 6–9 mm lato. **Lamellis** roseolis (2 A 10 M&P), distantibus, angustis, nonnullis angustissimis, decurrentibus. **Stipite** pallide roseo (1 A 8/9 M&P), subtus albo, haud viscido, glabro, saepe basin versus attenuato, 15–21 × 1.2–2 mm. Mycelio basali tomentoso, albo. **Carne** alba, immutabili, carnosae, inodora.

Sporis 9.5–11.2 × 4.8–6.7 μm, ellipsoideis, levibus, depressione applanationeque suprahilari destitutis, in KOH hyalinis vel subflavido-hyalinis, inamyloideis, acyanophilis. **Hymenio**: Basidiis 33–52 × 7.8–11.2 μm, tetrasporis, plerumque tenuitunicatis, clavatis; paucis basidiis etiam tetrasporis sed pariete sclerificata (0.7–2 μm diam.) munitis. Cystidiis nullis, sed ad aciem et prope aciem cheilocystidiis raris filamentosis praesentibus, his 18.5–19 × 3.3–3.5 μm, aequalibus vel subampullaceis, hyalinis. **Hyphis** pilei radialiter dispositis, fibulatis, inamyloideis, aut filamentosis et 2–3 μm latis aut inflatis (cellulis usque ad 31 × 24 μm), tenuitunicatis, haud gelatinosis. Tramate hymenophorali regulari, ex hyphis hyalinis, partim subparalleliis, partim leniter intertextis, diametro variabilibus efformato. **Epicute pilei** cutiformi, ex hyphis levibus, tenuitunicatis, in NH₄OH hyalinis, haud incrustatis, 2.5–6.8 μm latis efformata. Hypodermii hyphis nonnihil latioribus.

Ad superficiem verticalem fossae in silva secundaria gregatim, terricola.

TYPUS—Brazil, Amazonas, Manaus, 12 VI 1977, *Singer B 9936* (INPA). Additional collection: same locality, 24 VI 1978, *Singer B 9936a* (INPA).

This species is similar to *G. flammeum* Sing. We have an additional collection which is macro- and microscopically almost fully identical with the type collection but is in fresh condition completely white and pigmentless, and grew on rotting woody matter (probably a fruit shell of Chrysobalanaceae) solitarily in primary terra firme forest. This is preserved under the provisional name *G.*

oligoadelphum. The only carpophore available comes from Brazil, Amazonas, 30 km N of Manaus, 13 VII 1977, *Singer B 10101* (INPA).

***Gerronema mariae* Sing., spec. nov.**

Pileo intense aureo-flavo, lenissime hygrophano et ad aureolinum ("aureolin Y" M&P) pallescente, sicco minus laete flavidobrunneo vel pallide flavobrunneo, haud viscido, leniter pellucide striatulo ad marginem sed haud sulcato, carnosio-firmo, sub lente in siccis innate brunneo-striato-fibrilloso supra fundum flavidulum, glabro vel subglabro, convexo, centro umbilicato, (22–)50–59 mm lato. **Lamellis** concoloribus pileo vegeto sed ochraceo-brunneis in herbario, subconfertis vel moderatim confertis, sat angustis vel mediocriter latis, simplicibus vel interdum inverse furcatis, arcuatis, decurrentibus. Lamellis humidis charta alba flavo maculatur. Sporarum massa candida. **Stipite** quam pileus pallidiore, in siccis albedo, levi, sub lente partim subtomentoso vel tomentoso sed macrospice glabro vel subglabro, in adultis cavo, KOH ope superficie brunneo-maculato, aequali vel basin versus attenuato, (21–)30–33 × (5–)7–9.5 mm. Mycelio basali strigoso sed frequenter sparso vel subnullo, albidulo. **Carne** flavida, sicco albicante, ceterum immutabili. Odore nullo. Sapore miti.

Sporis 5–6 × 4.5–5.5 μm , plerumque 5.5 × 5 μm , globosis vel subglobosis, pariete hyalina, inamyloidea, acyanophila et haud manifeste heterogena, subpunctulata vel sublevi et gutta globosa oleaginea nuntius, circumferentia levi sub immersione. **Hymenio:** Basidiis pro ratione longissimis, 30–40 × 5.5–6.5 μm , tetrasporis; basidiolis haud fusoides. Sterigmatibus usque ad 9 μm longis. Cheilocystidiis ad aciem numerosis, sparsis ad latera prope aciem, ita ut acies heteromorpha dicatur, 34–40 × 3–4.8 μm , subhyalinis vel subflavidis, filamentosis atque apice frequenter claviculatis vel rarius attenuatis, saepe flexuosis; interdum pseudocystidiis inconspicuis praesentibus; pleurocystidiis haud differentiatis. **Hyphis** inamyloideis, fibulatis. Tramate hymenophorali regulari, hyalino, ex hyphis filamentosis 1.5–11 μm latis, minime intertextis vel subparallelis et hyphis oleiferis sat numerosis, 4.2–5.2 μm latis, melleis efformato. Hae interdum hymenium irrumpent et pseudocystidia inconspicua, haud projicientia, anguste clavata formant. **Epicute pilei** cutiformi ex hyphis levibus, 3–4 μm latis, tenuitunicatis efformata; dermatocystidiis raris, e. gr. 45 × 7.5 μm ,

utriformibus, tenuitunicatis, prostratis. Hypodermio cutiformi, ex hyphis latioribus, flavo-melleis vel flavidulis efformato.

Ad truncum dicotyledoneum locis umbrosis in silva secundaria terrae firmae gregatim.

TYPUS—Brazil, Amazonas, Manaus, 25 IV 1978, leg. *M. Souza*, comm. *Singer B 10997* (INPA).

This species is difficult to insert in any of the sections of *Gerronema*, although it undoubtedly belongs to that genus. Its size, area of distribution, and habitat tend to show affinity with sect. *Xanthophylla*. The spore wall is similar to that of *G. macrosporum* Sing. in subg. *Romagnesia*, yet the endosporium is not metachromatic as in sect. *Haasiella*, and the pleuro- and dermatocystidia are much less numerous and conspicuous than in sect. *Fibulae*, and the carpophores are larger and fleshier than in all known representatives of subg. *Romagnesia*.

***Gerronema pantoxanthum* Sing., spec. nov.**

Pileo flavido-ceraceo ("colonial Y," "mustard" M&P), olivaceo-brunneo vel brunneo vel fuligineo colore vibecino-virgato ad marginem et ex integro supra papillam ("old bronze," "bronze lustre," "olive brown" M&P), sub lente radiatim innate fibrilloso, sed glabro, haud viscido, levi, rarius ad marginem sulcato, convexo, centro depresso in adultis et constanter acute vel subacute papillato in depressione, 28–37 mm lato. **Lamellis** flavis ("chrome Y," 9 L 1, 9 L 3, 10 L 3 M&P), distantibus vel subdistantibus, haud vel in vetustis paulum intervenosis, mediocriter latis vel subangustis, lamellulis insertis sed plerumque haud regulariter tridymis, arcuatis vel subarcuatis, decurrentibus. **Stipite** aut lamellis concolori aut olivaceo-flavo ("glint o' gold" M&P) aut isabellino ("India buff" M&P), sicco grisascente, subpruinato ut minime in parte superiore sub lente, haud viscido, levi, aequali vel subaequali, 26–60 × 1.5–2.2 mm. Mycelio basali albo, interdum sparso. **Carne** pallida vel superficiebus concolori, immutabili, subtenaci in siccis, inodora.

Sporis 6.2–8.2 × 3–5.2 μm , ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 26–32 × 6.5–7.5 μm , tetrasporis. Cystidiis et cheilocystidiis nullis. **Hyphis** fibulatis, inamyloideis, haud gelatinosis. Tramate hymenophorali regulari ex hyphis \pm intertextis, 2.5–26 μm latis efformato. **Epicute pilei** cutiformi, saepe ten-

uissimo et partim hypodermium exponente, ex hyphis levibus, hyalinis in NH_4OH et KOH , filamentosis, 1.5–2.2 μm diam. efformata. Hypodermio ex hyphis hyalinis aut pigmentatis, latoribus (usque ad 18 μm diam.); pigmento vacuolari, in siccis in KOH et NH_4OH fuscogriseolo, haud intraparietali nec incrustante. Dermatocystidiis in pileo nullis. Tegumento stipitis e dermatocystidiis efformato; his sat numerosis ad apicem stipitis, hyalinis vel fumosis, subcylindraccis, saepe semel vel bis constrictis, obtusis, rarius anguste breviterque appendiculatis.

Ad lignum dicotyledoneum in silva pluviali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 25 V 1977, *Singer B 9713* (INPA). Additional collections: road Manaus-Caracará, km 45, 11 VII 1977, *Singer B 10055* (INPA) and 30 km N of Manaus, 9 VII 1960, *Singer B 3441*.

This is related to *G. xanthodictyon* Sing. (sect. *Xanthophylla*) but its carpophores are larger, its spores smaller, its lamellae strongly intervenose.

Gerronema sucrensis Sing., spec. nov.

Pileo spadiceo centro et sulcis pallidioribus, per medium radium sulcato (“cattail” M&P in siccis), convexo, centro profunde umbilicato, glabro, opaco, 3–5 mm in siccis. **Lamellis** in siccis fuscidulo-griseis, angustis, arcuatis, decurrentibus, (“Army Br” M&P in siccis). **Stipite** pileo concolori, subpallidioribus basin versus, glabro, aequali, 16–22 \times 1 mm ad apicem usque ad 0.5 mm attenuato (in siccis). Mycelio basali strigoso, strigis per radium usque ad 8 mm amplum repentibus, albidis. **Carne** tenui.

Sporis 4–5 \times 2.5–3.5 μm , breviter ellipsoideis vel ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 17–27 \times 4–5.5 μm , tetrasporis; basidiolis haud fusiformibus. Cystidiis et cheilocystidiis nullis. **Hyphis** plerumque filamentosis, nonnullis cellulis longis inter septa et usque ad 11 μm latis, hyalinis, haud gelatinosis, densis et elasticis, aegre dissociatis KOH ope, inamyloideis, fibulatis. **Epicute** cutiformi, hyalina, levibus atque raras sparsasque procurrentias et dermatocystidia exigua, inconspicua, hyalina 10–14.5 \times 4–5.5 μm emittentibus. Hypodermio fuscidulo vel brunneo, pigmento intracellulari tantum.

Ad lignum.

TYPUS—Venezuela, Sucre, 9 km N of road Rin-

con-Carupano-El Palar, 6 VII 1972, leg. *Dumont, Cain, Samuels & Morillo, Dumont VE 4018* (NY).

Gerronema yalae Sing., spec. nov.

Pileo bubalino-hyalino, in vegetis leniter cinnamomeo-tincto, sicco laete cinnamomeo, per duas tertias radii sulcato et ibi cinnamomeo-virgato in siccis, sed haud innate fibrilloso, hygrophano, convexo, centro depresso, \pm 12 mm lato. **Lamellis** concoloribus, in siccis sordide fuscidulis, angustis, furcatis (et inverse), subdistantibus, subarcuatis, decurrentibus. **Stipite** concolori, ad apicem subtiliter pruinosulo, macroscopice ex toto glabro, farcto, aequali vel apice leniter attenuato, \pm 23 \times 2 mm. Mycelio basali bene evoluto, albo. **Carne** sordide alba in siccis, tenuissima in pileo ut minime ad marginem, inodora.

Sporis 7.5–10 \times 4–5 μm , raro usque ad 12 \times 6 μm , ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 27–32 \times 5–7.5(–8.5) μm , tetrasporis; basidiolis haud fusiformibus. Cystidiis nullis. Cheilocystidiis bene evolutis nullis, sed ad marginem pilei nonnullis hyphis terminalibus flexuosis et intertextis, \pm 4 μm latis visis. **Hyphis** fibulatis, haud gelatinosis, inamyloideis. **Epicute pilei** ab hypodermio vix differentiato, ex strato tenuissimo intermittente hypharum repentium efformata et dermatocystidia pauca minutissima producentibus. His dermatocystidiis stipitis simillimis, 4–8 \times 2.5–5.5 μm . Hypodermio cutiformi, ex hyphis 4–10.5 μm latis, pigmentatis efformato, profundo. Pigmento intracellulari, in KOH dissoluto, cremeo-grisello, haud intraparietali neque incrustante. Tegumento stipitis ex membris terminalium hypharum cystidiformibus efformato, hyphis filiformibus intercalatis; dermatocystidiis 8–31 \times 3–5.5 μm , cylindraccis vel ventricosis, constrictione subapicali subcapitatis vel mucronatis, moderatim densis, tenuitunicatis.

Ad lichenes frustulaque corticis *Polylepidis australis* Bitter supra saxa solitario in silvis subalpinis praecandinis, supra 2000 m alt.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 11 II 1965, *Singer T 4011* (F).

This species belongs in sect. *Umbilicata* (Sing.) Sing.

Lactocollybia sect. *Graminicolae* Sing., sect. nov.

Tramate gelatinoso, hyphis defibulatis. Typus sectionis: *L. graminicola* Sing.

This section in many ways reminds me of the genus *Cyptotrama*, but belongs in *Lactocollybia* because of the not truly bilateral hymenophoral trama and the distinctly eccentric stipe.

Lactocollybia graminicola Sing., spec. nov.

Pileo sicco ferrugineo-brunneo, glabro, prope marginem sub lente pubescente, levi sed frequenter rugoso discum versus, circulari, margine primum incurvo, 2–6.5 mm lato. **Lamellis** albis, distantibus, intermixtis, nonnullis furcatis, haud intervenosis, satis angustis vel mediocriter latis, acie integris, adnexis. **Stipite** pileo concolori, subtiliter pubescente sub lente, aequali vel leniter apicem versus attenuato, primum subcentrali vel excentrico, dein excentrico vel sublaterali, 1.5–3 × 0.3–0.4 mm. Mycelio basali bene evoluto, albo, radiante.

Sporis 8.5–12.2 × 6–9.5 μm, ellipsoideis vel ventricosis, levibus, tenuitunicatis, hyalinis, inamyloideis. **Hymenio**: Basidiis 30–41(–52) × 9–10.5 μm, tetrasporis, paucis bisporis; septo basali defibulato. Cystidiis nullis; pseudocystidiis gloeocystidialibus praesentibus, 26–36 × 6.5–11.5(–14) μm, sat numerosis, versiformibus, interdum mucronatis vel appendiculatis, subhyalinis vel cereis in KOH, azureo cresylico intus caerulescentibus, contentu homogeneo vel frequentius vermiformi vel granuloso. Cheilocystidiis 28–38 × 2–4 μm, filamentosis vel ad apicem anguste claviculatis in medio aut ad basin anguste ventricosis, ad aciem lamellarum prope marginem pilei numerosis, hyalinis. Massis resinaceis succineis praesertim prope acies lamellarum in azureo cresylico caeruleis praesentibus et ex eis lamellis ad aciem in siccis saepe fulvescentibus. **Hyphis** pilei bistratis, strato supero gelatinoso, ex hyphis filamentosis (0.5–1.5 μm latis), sine ordine laxaque dispositis, hyalinis, defibulatis efformato; strato infero partim obsoleto, similibus ex hyphis efformato, vix gelatinoso. Tramate hymenophorali regulari subtypi Clitocybarum modo in hymenopodio leniter divergente, ex hyphis vix parallelis tenuibus, ut minime partim gelatinosis efformato; mediostrato et strato laterali nullo modo differentiatis. Gloeovascularis in ambobus stratis tramatis praesentibus, ± 3–4 μm latis, longissimis. His hyphisque ceteris omnibus inamyloideis, defibulatis. **Epicate pilei** palisadica et trichodermiali, ex hyphis hyalinis et ochraceo-brunneolis efformata, his partim paulum gelatinosis (sed minus gelatinosis quam trama), cellulis terminalibus cheilocystidiis simillimis; gloeovascularis in epicate praesentibus.

Tegumento stipitis e pilis hyphosis longis, hyalinis efformato.

Ad Gramineas altas indeterminatas secundum flumen gregatim in vegetatione tropicali.

TYPUS—Venezuela, D.F., near Río Caracas, 22 VII 1972, leg. *Dumont, Cain, Samuels, Manara, Dumont VE 5632* (NY).

The only species of sect. *Graminicolae* Sing. has the same noteworthy characteristics as the section.

Leucopaxillus sainii Sing., spec. nov.

Pileo aurantio-flavido-brunneo, glabro, sub lente partim lenissime innate fibrilloso, praesertim ad marginem subvirgatum, sed levi, partim tantum breviter plicato, viscido, primum involuto, infundibuliformi in adulto, usque ad 180 mm lato; FeSO₄ griseolo, HNO₃ aurantiaco-flavo, KOH subflavidulo, brunneo solutione aquosa phenolica (10%). **Lamellis** subpallidis, confertissimis, angustis vel angustissimis, ad aciem integris, intermixtis, nonnullis furcatis, decurrentibus. Sporis in massa cremeo-albidis. **Stipite** olivaceo-flavo-brunneo, siccano subatro, pruinoso-fibrilloso et venuloso, solido, basin versus attenuato, usque ad 110 mm longo, 29–35 mm lato. **Carne** alba, immutabili, sapore et odore haud notabilibus.

Sporis 5.5–6 × 3.5–4 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 13.8–27 × 5–5.5 μm, tetrasporis, sterigmatibus 3.7–4.5 μm longis, moderatim curvatis. Cystidiis nullis. Cheilocystidiis numerosis sed acie vix heteromorpha, 9–20 × 2.5–3.5 μm, versiformibus, saepe ampullaceis vel anguste ventricosis vel fusoides (et tunc frequenter apice mucronatis aut acutis, ceterum obtusis) tenui- vel firme sed haud crasse tunicatis, hyalinis. **Hyphis** fibulatis, multis fibulis numismatis majoris forma gaudentibus, parietibus inamyloideis, haud gelatinascentibus. Hyphis oleiferis in tramate pilei praesentibus. Tramate hymenophorali subhyalino, regulari, partim subintertextis hyphis praesertim filamentosis composito. **Epicate pilei** ixotrichodermiali, ex hyphis filamentosis, in KOH subhyalinis, 1.5–3 μm latis et apice obtusis efformata. Hypodermio cutiformi, pallide ochreo-flavidulo, ex hyphis filamentosis efformato; pigmento intracellulari, haud incrustante, intraparietali vix ullo.

Ad humum Abieteti subalpini 2700 m alt., gregatim.

TYPUS—India, Himachal Pradesh, Narkanda, 9 VIII 1979, *N. S. Atri PUN 328* (F).

The viscid pileus and the characteristic cheilocystidia are distinctive. *Leucopaxillus sainii* is otherwise very similar to *L. giganteus* (Fr.) Sing. The Indian fungus was described in fresh condition by the collector and his notes on the fungus as well as the dried material were sent to me by Dr. Saini for whom the species is named.

Melanoleuca cremeospora Sing., spec. nov.

Pileo griseo umbone griseobrunneo, zonis et maculis pallidis variegato, opaco, glabro, convexo, dein applanato, umbonato, 38–50 mm lato. **Lamellis** albis, angustis (3.5–4 mm latis), confertissimis, sinuatis, partim decurrentibus in nonnullis speciminibus. Sporis in massa haud desiccata manifeste cremeis (Crawshay B), exsiccatione usque ad Ilc Romagnesii. **Stipite** pallido vel pallide sordideque griseolo, innate subfibrilloso, solido, in duabus tertiis superioribus aequali, subtus basin versus incrassato, usque ad 60 mm longo, 2.5 mm lato, sed ad basin 4–5.5 mm lato. **Carne** pilei alba, stipitis bubalino-pallida, subalbida, in siccis omnino pallide brunneola, in pileo tenui, inodora.

Sporis 7–8 × 4.5–5.5 μm, ellipsoideis, depressione suprahilari destitutis, hyalinis, ornamentatione amylacea 0.2–0.5 μm alta, plerumque punctata paucis verrucis isolatis praesentibus sed plerumque typi IV, V, IV-II, supra hilum area levi (“plage”) bene delimitata praevisis. **Hymenio:** Basidiis 18.5–27 × 4.8–5.5 μm, tetrasporis. Cystidiis ad latera lamellarum sparsis, ad acies sat numerosis, 27–38 × 5.5–10 μm, subulatis vel rarius ampullaceis, apice subacutis, raro obtusis, apice crystallis aculeiformibus reversis muricatis, tenuitunicatis, hyalinis. **Hyphis** defibulatis; hyphis oleiferis admodum sparsis vel nullis. **Epicute pilei** ex hyphis filamentosis, 3(–5) μm latis, horizontalibus sed haud distincte radialibus cutiformiter dispositis efformata; pigmento brunneolo-fusco, intracellulari, dissoluto. Ex hyphis epicutis pilei et in superficie stipitis cellulis terminalibus ascendentibus vel erectis hypharum cylindraceis et ± 8.5 μm latis, obtusis praesentibus sed dermatocystidiis veris nullis.

Ad terram in silva subtropicali-montana.

TYPE—Argentina, Tucumán, Sierra de San Javier, Ciudad Universitaria, 9 III 1961, *Singer T 3684* (F).

Melanoleuca mackleri Sing., spec. nov.

Pileo biso-fusco, centro ad umbonem plerumque obscuriore, levi, vel vix striatulo ad marginem, hygrophano, glabro, convexo, dein applanato vel subapplanato, demum saepe concavo, centro umbonato vel subumbonato, rarius obtuso, 39–72 mm lato. **Lamellis** albido-sordidis, subgriseolis, dein pallide griseis, angustis vel sublatis (± 5 mm latis), confertis, sinuatis, rarius adnexis, acie interdum subbisa. Sporis in massa candidis (Ia). **Stipite** fusco-umbrino vel pileo concolori, longitudinaliter innate fibrilloso, interdum costato, ad apicem haud furfuraceo, solido, aequali, plerumque 30–35 × 3–7 mm, sed interdum usque ad 60 × 8.5 mm. **Carne** sordide pallida vel albidula, in stipite brunneola vel in zona peripherica superficiei concolori vel subgrisea, ceterum immutabili. Odore subnullo. Sapore miti sed interdum inamoeno, neque amaro nec farinaceo.

Sporis (5.8–)6.5–9.2 × (4.5–)4.7–6 μm, plerumque 7.5–9 × 4.5–6 μm et ellipsoideis, hyalinis, ornamentatione verruculosa, verrucis ± 0.5 μm altis sed paucis leniter altioribus vel humilioribus, nonnullis lineatim connexis aut catenulatis (typi VI, IV-VIII, IV), supra hilum zona levi manifesta (“plage”) delimitata, amylacea munitis. **Hymenio:** Basidiis 21–33 × 7.3–10 μm, tetrasporis, clavatis vel ventricosis. Cystidiis paucis et inconspicuis, e. gr. 18 × 3–4(–7.5) μm, obtusis, subtus plerumque 1.6–2 μm latis, raro usque ad 3 μm latis, nonnullis 1–3-septatis, tenuitunicatis et interdum collabentibus. Cheilocystidiis ad et prope aciem vix subheteromorpham 13–27(–30) × 6–10 μm, sat numerosis, versiformibus, saepe ventricosis, utrifurmis, clavatis, interdum apicaliter vel lateraliter appendiculatis, hyalinis, nonnullis brunneolis, tenuitunicatis vel pariete firma, haud crassa instructis. **Hyphis** defibulatis, inamyloideis, nonnullis (in cortice stipitis praesertim) pigmento brunneo leniter incrustatis, in tramate hymenophorali regulari hyalinis et parallelis vel subparallelis, usque ad 19 μm latis, sed multis filiformibus, haud gelatinosis. **Epicute pilei** cutiformi, ex hyphis in zona externa pigmento leniter incrustatis, usque ad 3 μm, in zone inferiore 1.5–7 μm latis efformata; dermatocystidiis nullis. Hypodermio ex hyphis nonnihil latioribus, haud incrustatis sed pigmento vacuolari spadiceo vel umbrino-fusco impletis, cutiformiter dispositis, frequenter subintertextis vel intertextis efformato. Stipitis tegumento dermatocystidiis sparsis efformato, his e. gr. 23 × 6.5 μm, hyalinis vel subhy-

alinis, tenuitunicatis, forma sua cheilocystidiis simillimis.

Ad terram in silvis sparsis Quercuum et mixtis Sequoiae, plerumque gregatim.

TYPUS—USA, California, Placerito Canyon State Park, 14 II 1982, *Singer N 5018* (F). Additional collection: Samuel Taylor Park, 6 II 1982, leg. *Mackler, Singer & Vergeer, Singer N 5006* (F).

Melanoleuca xavierii Sing., spec. nov.

Pileo castaneo-fuligineo, marginem versus gri-seolo-brunneo vel fusco-griseo, ad marginem extremum minute pruinulosum subtomentosumque, sed glabrescente, ceterum glabro, levi, convexo, dein subapplanato, centro umbonato, ± 40 mm lato. **Lamellis** candidis, confertissimis, angustis (3.5–4 mm), sinuatis. Massa sporarum candida sed exsiccatione crenea (IIB Romagnesii). **Stipite** sordide fusco-brunneo, nonnihil appresse albido-fibrilloso, aequali sed ad basin subbulbose dilatato, $\pm 30 \times 3$ –3.5 mm, ad basin ± 7 mm lato. **Carne** pilei stipitisque brunnea, inodora.

Sporis 6.5–8.5 \times 4.5–5 μm , rarius usque ad 9 \times 5.5 μm , ellipsoideis, hyalinis, gutta interna globosa vel elongata munitis vel destitutis, ornamentatione amylacea punctata vel verruculosa, 0.2–0.5 μm alta plerumque typi IV, IV-II, supra hilum zona levi reducta vel ampla (“plage”) delimitata gaudentibus. **Hymenio**: Basidiis (2–3)–4-sporis, 20–30 \times 6–8.5 μm . Cystidiis ad latera et acies lamellarum numerosis sed subsparis, 35–73 \times 6–16 μm , fusoides, paucis brevioribus et tunc interdum ampullaceis, apice subacute crystallinomicatis, hyalinis, tenuitunicatis. **Hyphis** defibulatis, inamyloideis; oleiferis hyphis paucis vel subnullis. Pigmento in pileo stipiteque haud incrustante nec manifeste intraparietali. Tramate hymenophorali regulari, hyalino. **Epicute pilei** subfasciculatis ex hyphis appressis, filamentosis, parallelis vel subparallelis inter se sed fasciculis horizontalibus haud omnibus radialiter dispositis, cutiformi; dermatocystidiis ad marginem pilei tantum praesentibus et eis stipitis simillimis. Stipitis tegumento e dermatocystidiis efformato, his sparsis sed in nonnullis areis numerosis, 33–73 \times 9–16 μm , parte ventricosa subtus collocata et apice longe effilata, ceterum cystidiis hymenialibus simillimis, in parte inferiore stipitis tantum multis ex

eis pigmento vacuolari dissoluto fusco repletis. **Hyphis** 5–9 μm latis inter ea sparsis.

Ad terram in silva subtropicali-montana.

TYPUS—Argentina, Tucumán, Sierra de San Javier, Ciudad Universitaria, 1100 m alt., 9 III 1961, *Singer T 3682* (F).

Collybia amazonensis Sing., spec. nov.

Pileo colore *Marasmii oreadis* gaudente, vel ad umbonem ochraceo-brunneo vel flavo-ochraceo (e. gr. 10 H 6 M&P), marginem versus generatim pallidior, glabro, haud viscido, haud virgato, ad marginem vel usque ad duas tertias radii sulcato, convexo, umbonato, 28–75 mm lato. **Lamellis** albidis vel pileo subconcoloribus, mediocriter latis vel latissimis, subconfertis vel distantibus, haud vel vix intervenosis, adnatis, rarius sinuato-adnatis vel adnatis, siccando e sporis pallidissime cinnamomeis. **Stipite** albo, siccando brunnescente vel partim subbrunneo, \pm spiraliter vel longitudinaliter fibrilloso-sulcato, glabro, cavo, subaequali vel frequentius basin versus attenuato, immo subacute subradicante, 47–104 \times 3–8 mm, ad basem ipsam 2–2.5 mm lato in plurimis. Mycelio basali sparso, albido. **Carne** alba, immutabili, inodora, odore rarius fructuum, haud farinoso. Sapore amaro.

Sporis 5.5–8.7 \times 3.5–5 μm , plerumque 6.5–7.5 \times 4–4.5 μm , ellipsoideis, nonnullis ovoideis, levibus, pariete tenui vel firma (0.2–0.3 μm crassa in maturis), omnibus vel magna e parte debiliter vel fortiter pseudoamyloideis et in strato externo cyanophilis, hyalinis vel pallidissime citrinis in KOH. **Hymenio**: Basidiis 22.5–38 \times 6–8 μm , plerumque $\pm 25 \times 6.5$ μm , tetrasporis aut (e. gr. in typo) 2–4-sporis (in tetrasporis sporis usque ad 7.5 μm longis tantum visis); basidiolis subcylindraceis vel anguste clavatis, haud fusoides. Cystidiis nullis. Cheilocystidiis raris vel sat numerosis, inconspicuis et versiformibus aut ventricososubcapitatis (20–29 \times 3.5–5.5 μm). **Hyphis** inamyloideis, fibulatis, haud gelatinosis, hyalinis, in tramate hymenophorali regulari 3–14 μm latis, in stipite subparallelis, in mediostrato laxius, versus subhymenium densius dispositis et magis parallelis. **Epicute pilei** cutiformi, sat densa, ad superficiem pilei excrescentia et diverticula longa, subcystidiformia, hyalina, 12–20 \times 2–4.5 μm , interdum furcata sed ad basin haud septata emittente. Hypodermio et epicute vix differentiatas,

hyphis subparallelis, filamentosis, trama pilei versus paullum crassioribus, eis umbonis pilei brunneolis, ceterum gilvis; pigmento haud intraparietali nec incrustante ad marginem pilei, sed in centro interdum etiam intraparietali nec umquam incrustante. Structura *C. dryophilae* haud evoluta. Tegumento stipitis subnullo: Ex hyphis verticalibus superficialibus nonnullis tantum diverticulis vel pilis brevibus, obtusis, hyalinis excrescentibus, his sparsis, $10-22 \times 2.3-5 \mu\text{m}$.

In humo profundo silvarum typi campinarana, rarius ad lignum putridum (et tunc carpophoris basi haud subradicantibus), gregatim.

TYPUS—Brazil, Amazonas, road Manaus-Caracará, km 45, 10 VIII 1978, *Singer B 11376* (INPA). Additional collections: same locality, 3 VIII 1978, *Singer B 11350* (INPA); same locality, 28 II 1978, *Singer B 10737* (INPA).

This species belongs in sect. *Striipedes*, stirps Maculata.

Collybia embrapaensis Sing., spec. nov.

Pileo laete pallideve ochraceo-brunneo, ad marginem grisello-ochraceo-brunneo in vegetis, hygrophano vel subhygrophano ut minime ad marginem, exsiccatione gilvo, margine sulcato, subtomentoso per totam superficiem, demum subglabro, convexo, centro depresso, 12–13.5 mm lato. **Lamellis** brunneolis, angustis, mediocriter confertis vel subdistantibus fere, arcuatis, non intervenosis, adnatis, rarius adnexis vel subcollariato-secedentibus. **Stipite** sordide pallideque ochreo vel pallide gilvo, interdum ad apicem pileo concolori aut ad basin grisello-cinnamomeo, in siccis brunneolo-cinnamomeo, fortiter vel minute hispido-pubescente vel pubescente-tomentoso ex integro, cavo, aequali vel basin versus angustato, $14-31 \times 0.6-1.8 \text{ mm}$. Mycelio basali fibrilloso, albido siccando pallide sordideque cinnamomeo. **Carne** superficiebus concolori vel pallidior, inodora.

Sporis (6–)6.5–9.5 \times 4–4.5 μm , ellipsoideis vel oblongis vel fusoides, levibus, hyalinis, inamyloideis, plerumque ellipsoideis et applanatione suprahilari instructis vel destitutis. **Hymenio**: Basidiis 25–31 \times 8–9 μm , tetrasporis; basidiolis aut fusoides aut haud fusoides. Cystidiis nullis vel basidiomorphis (sed basidiis basidiolisque majoribus), e. gr. 40–45 \times 10–11 μm , raris vel sparsis. Cheilocystidiis ad aciem heteromorpham nume-

rosissimis et interdum latera lamellarum paullatim invadentibus, 30–50 \times 4–8 μm , plerumque lateraliter et apicaliter furcatis vel appendiculatis vel diverticulatis, nodosis vel excrescentiis subcapitatis instructis, raro integris, subcylindraceis vel ventricos-subclavatis, sed admodum versiformibus, hyalinis, rarius pallide melleis, tenui-vel subcrassitunicatis, interdum prope basin ramosis. **Hyphis** haud gelatinosis, fibulatis, inamyloideis. Tramate hymenophorali regulari. **Epicute pilei** structuram Ramealium exhibente, elementis cystidiformibus (e. gr. 33–50 \times 7–10 μm) differentiatis, omnino hyalina vel pallide gilva. Hypodermio cutiformi, ex hyphis filamentosis, melleis vel stramineis efformato; pigmento intraparietali, interdum incrustante, sed incrustatione straminea, haud obscura. Tegumento stipitis ex elementis piliformibus vel cystidioideis densis efformato, his 23–210 \times 4–11 μm , versiformibus sed maxima e parte simplicibus et integris, hyalinis, tenui-vel firme tunicatis, haud crassitunicatis.

Ad folia mono- et dicotyledonea nec non ad frustula lignea et terram in silvis terrae firmae primariis et secundariis, subgregatim.

TYPUS—Brazil, Amazonas, Reserva Ducke, 6 X 1978, *Singer B 11403* (INPA). Additional collections: 30 km N of Manaus, 23 IV 1977, leg. T. St. John, *Singer B 9800* (INPA); Manaus, Parque Zoológico Militar, 1 I 1979, *Singer B 11468* (INPA); Bolivia, Beni, Guayamerín, 8 III 1956, *Singer B 11468* (LIL).

Collybia embrapaensis is not rare in Amazonia. It belongs in sect. *Subfumosae* Sing. It is not impossible that *Marasmius domesticus* Murr. non *Collybia domestica* (Murr.) Murr. is conspecific, although in Murrill's species which we have compared the carpophores are much larger. *Collybia hemileuca* (Berk. & Curt.) Sacc. is related but different.

Collybia inconspicua Sing., spec. nov.

Pileo avellaneo-albido, tomentoso, hygrophano, siccando in vegetis albido, levi, convexo, siccando frequenter umbonatescente, 4–7 mm lato. **Lamellis** concoloribus, mediocriter latis, subdistantibus, haud intervenosis, adnatis. **Stipite** pallide avellaneo-griseolo, ex toto fibrilloso et pubescente-subvellereo, ad basin fortiter hirsuto, aequali, 12–20 \times 0.5–0.8 mm. **Carne** tenui, inodora.

Sporis 5.5–6.7 × 3.8–4.5 μm, ellipsoideis, levibus, inamyloideis. **Hymenio:** Basidiis 24 × 6.5 μm, tetrasporis; basidiolis haud fusoideis. Cystidiis ad acies lateraque lamellarum numerosissimis, dimorphis, (1) plerumque 35–38 × 9–12 μm, late ventricosis vel basidiomorphis, tenuitunicatis, hyalinis, apice rotundatis, (2) similibus, rarioribus, 28–33 × 7–8 μm, ampullaceis, Cheilocystidiis in adultis frequenter versiformibus, subdifferentiatis. **Hyphis** fibulatis, inamyloideis, haud gelatinosis. Tramate hymenophorali regulari, ex hyphis latis (8–12 μm) subparallelis, hyalinis, nonnullis brunneo-incrustatulis efformato. **Epicute pilei** structura *C. dryophilae* gaudente et ex hyphis latis (8–12 μm), efformata. Hypodermio et talibus et magis inflatis (usque ad 20 μm diam.) hyphis consistente. Pigmento sparso pallide brunneo vel subhyalino tenuiter incrustante.

Ad ramenta, ad ramulos et folia dicotyledonea putrescentia nec non ad terram argillosam in silva pluviali typi terrae firmae primaria gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), *Singer B 10233* (INPA).

This belongs in sect. *Levipedes* (Fr.).

Collybia lodgeae Sing., spec. nov.

Pileo cinnamomeo vel brunneo, hygrophano, pallide carneo inter sulcos et in centro desiccatione, glabro vel subglabro, sub lente debiliter innate radialiter fibrilloso vel striatulo, margine striato dein sulcato, convexo, dein centro depresso, 20–50 mm lato. **Lamellis** albis umbris carneolis, angustis (1–4 mm latis), simplicibus, rarius paucis furcatis, haud intervenosis, subdistantibus vel distantibus, acie integris, adnato-subdecurrentibus. Sporarum maesa cremeo-alba. **Stipite** sursum pallido et partim cinnamomeo, subtile pubescente, aequali vel minime attenuato apicem versus, spirae instar saepe convoluto, 20–50 × 2–5 mm. Mycelio basali sparso, albo. **Carne** in pileo pallescente, in stipite lenta. Odore fragrante, butyraceo. Sapore miti.

Sporis 6.5–8 × 3–3.5 μm, fusoideo-oblongis, hyalinis, levibus, inamyloideis. **Hymenio:** Basidiis 21–28 × 5 μm, tetrasporis; basidiolis filamentosis vel anguste clavatis vel fusoideis. Cystidiis dimorphis (1) 26–44 × 5.2–7.5 μm, fusoideis, acutis, cystidioliformibus, (2) 26–56 × 4.5–7 μm, versiformibus, sed semper obtusis, saepe utriformibus,

e strato profundiore natis. Cheilocystidiis etiam dimorphis 30–44 × 5.2–12 μm numerosis, tenuitunicatis. **Hyphis** (cum cystidiis et cheilocystidiis) tenuitunicatis, interdum firme vel subcrasse tunicatis, inamyloideis, haud gelatinosis, fibulatis. Tramate hymenophorali regulari, ex hyphis filamentosis tantum efformato. Hyphis stipitis hyalinis vel subhyalinis, haud pigmento incrustatis, 2, 5–6 μm latis, pariete 0.2–0.8 μm crassa instructis, parallelis. **Epicute pilei** tenui, subhyalina, cutiformi, hyphis superficialibus tantum aegre subgelatinosis. Hypodermio haud continuo sed manifesto pigmento atrobrunneo incrustato, pariete propria subhyalina et diametro hypharum majore quam in epicute. Dermatocystidiis in pilei superficie nullis sed hyphis supernis brevibus ex crescentia sparsa, hyalina, versiformia, 4.5–8 μm projicientia emittentibus. Tegumento stipitis e spinis pilosis subcrasse tunicatis, acutis, conicis 10–14 × 1.2–4 μm, laxe dispositis et dermatocystidiis 11–27 × 2–5.5 μm, cylindraceis, clavatis, utriformibus, hyalinis, obtusis, tenuiter vel firme sed haud crasse tunicatis efformato.

Ad truncum delapsus in silva tropicali gregatim.

TYPUS—Costa Rica, Heredia, Sta. OTS “La Selva” near Puerto Viejo de Sarapiquí, 23 XII 1979, *Lodge 294* (F).

This species is somewhat difficult to place. The cystidia would indicate an affinity with *Cystidiosae*, Sing. but the surface of the stipe and the structure of the epicutis are more like those found in sect. *Subfumosae* Sing.

Collybia nobilior Sing., spec. nov.

Pileo centro castaneo, margine cinnamomeo, vix hygrophano, haud innate fibrilloso, glabro, haud viscido, per quartam partem radii sulcato, convexo, dein circa discum subumbonatum leniter depresso, ± 45 mm lato. **Lamellis** pallidis basi subcinnamomea, satis angustis, confertis, haud intervenosis, rotundato-liberis. **Stipite** pallido, ad apicem fulvo-pallido, siccando pallide brunneo ex toto, levi, glabro, sed minute et tenuiter sericeo (hyphis appressis), in adultis cavo, aequali sed basi angustato nec radicato, ± 76 × 5 mm. Mycelio basali albo. **Carne** pallida, inodora.

Sporis 7–9.5 × 3–5 μm, ellipsoideis vel rarius oblongis, plerumque depressione suprahilari gaudentibus, hyalinis, levibus, inamyloideis. **Hymen-**

io: Basidiis 14–26 × 6.5–7.8 μm, tetrasporis; basidiolis plerumque haud fusoides. Cystidiis et cheilocystidiis nullis visis. **Hyphis** fibulatis, plerumque filamentosis, paucis paullum inflatis, inamyloideis. Tramate hymenophorali regulari, hyalino. **Epicute pilei** cutiformi, haud gelatinosa, ex hyphis prostratis, subhyalinis, filamentosis, levibus efformata. Hypodermio cutiformi, brunneo, pigmento haud vel vix intraparietali, non incrustante, intracellulari. Tegumento stipitis hyphali tantum, dermatocystidiis nullis.

Ad humum in silva pluviali tropicali terrae firmae solitario.

TYPUS—Brazil, Amazonas, Reserva Ducke, 31 V 1979, *Singer B 11077* (INPA).

This species is quite different from other species of *Collybia* and might well justify a special section characterized by the stipe surface similar to that of sect. *Levipedes* and the epicutis like that of *Vesitipedes*.

Collybia phylladophiloides Sing., spec. nov.

Pileo carneo-griseo (“fawn,” “marron glacé” M&P), rarius castaneo, centro frequenter albicante vel bubalino, minute vel minutissime dense innate radialiter fibrilluloso, haud viscido, sed centro saepe homoganeo, ad marginem interdum sub lente minute scabriusculo, convexo, dein convexo-applanato vel plano, umbilicato, haud papillato, 7–28 mm lato. **Lamellis** albis, confertis vel confertissimis, angustis, venis paucis, distantibus vel anastomosibus interdum inconspicue connexis sed plerumque haud intervenosis, liberis vel subliberis. **Stipite** pileo concolori, sed ex integro admodum subtiliter albo-pubescente, subvillosa, aequali, saepe in humo inserto sed haud radicante, 43–50 × 1.3–1.5 mm. Mycelio basali saepe sparso, sordido vel albo. **Carne** tenui, inodora.

Sporis 5.5–7.5 × ± 3 μm, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 5–5.5 μm latis; basidiolis fusoides. Cheilocystidiis ad acies et prope aciem lamellarum heteromorpham sat numerosis sed versiformibus, ventricosis, clavatis, utriformibus, ampullaceis, 19–37 × 2–12 μm, interdum filamentosis, filamentoso-furcatis vel appendiculatis, hyalinis, tenuiparitalibus vel firme tunicatis sed haud crasse tunicatis. **Hyphis** fibulatis, sed interdum septis numerosis simplicibus secundariis praesentibus, inamyloideis, in stipite

parallelis, pigmento laete brunneolo-melleo, intraparietali. **Epicute pilei** tenuiter cutiformi, ex hyphis radiatim dispositis in fasciculis sed inter fascicula etiam structuram *C. dryophilae* formantibus et latoribus (4–11 μm latis, multidirectis, plus minusve furcatis). In epicute et hypodermio pigmento incrustante praesente vel fere absente. Tegumento stipitis in strato inferiore fortiter intertexto, in strato externo piloso, pilis densis, erectis, hyalinis vel subhyalinis, haud incrustatis, interdum mucronatis vel subcapitatis, cylindraceis vel subcylindraceis, obtusis vel subacutis, 55–100 × 2.3–5.5 μm.

Ad humum foliaque mono- vel dicotyledonea nec non ad ligna putrida in silva inundabili typi várzea gregatim et communiter obvia species.

TYPUS—Brazil, Amazonas, Lago Janauari, 18 III 1983, *Singer B 12444* (F). Additional collections: same locality, *Singer B 14453* (F); Paraná do Janaucá near Lago do Castanho, 23 V 1980, *Singer B 12186* (F).

Collybia rionegrensis Sing., spec. nov.

Pileo brunneo, margine pallidiore, per medium radium pellucide striato, glabro, convexo, obtuso, haud umbilicato, 6–7 mm lato. **Lamellis** pallide brunneolis vel cremeis, subconfertis vel subdistantibus, sat angustis, acie sub lente minute fimbriatula pallida marginatis, apicem dilatatam stipitis attingentibus. **Stipite** pallido-albidulo ad apicem, subtus cinnamomeo, dense albo-hirsuto vel conspicue pubescente, subaequali vel basin versus attenuato, 15–16 × 0.7–1 mm. Mycelio basali pallide fulvido, hirsuto. **Carne** tenui, inodora.

Sporis 7–8.5 × 4–4.5 μm, ellipsoideis, hyalinis levibus (paucis visis). **Hymenio**: Basidiis sat firme tunicatis et guttulis oleagineis repletis; basidiolis haud fusoides. Cheilocystidiis dermatocystidiis stipitis simillimis. **Hyphis** fibulatis, tenui- vel firme tunicatis in pileo, subcrasse tunicatis et parallelis in stipite, haud gelatinosis, subhyalinis, fibulatis. **Epicute pilei** cutiformi, structuram Ramealium haud formante, pigmento ochraceo intraparietali haud incrustante, ex hyphis filamentosis efformata. Dermatocystidiis nullis. Tegumenti stipitis hyphis piliformibus, singularibus vel fasciculariter condensatis, (40–)80–106 × 3–7(–10) μm, tenui- vel crassitunicatis (pariete plerumque 0.5–1 μm crassa), simplicibus, rotundato-obtusis ad apicem,

cylindraxis vel nonnihil irregularibus et nonnullis subflexuosis, nonnullis leniter inflatis in parte, praesertim ad basin.

Ad truncos Dicotyledonum in silva tropicali inundabili (igapó), dense gregatim.

TYPUS—Brazil, Amazonas, Ponta Negra near Manaus, 15 I 1978, *Singer B 10528* (INPA).

This species apparently belongs in sect. *Vestipedes*.

Collybia solitaria Sing., spec. nov.

Pileo brunneo (inter “burnt umber” et “kis kilim” M&P), sed centro et margine pallidis, haud manifeste hygrophano neque innate fibrilloso, per tertiam partem radii pellucide striato, glabro, convexo, dein applanato, subumbonato, margine demum recurvato, 15–16 mm lato. **Lamellis** albis, confertis, satis angustis, liberis. **Stipite** albo, glabro, haud viscido, subaequali, 49–50 × 1.3–2 mm. Mycelio basali sparso, fibrilloso-tomentoso, albo. **Carne** alba, immutabili, inodora.

Sporis 6–6.8 × 2.5–3 μm, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 15–16 × 6–6.5 μm, clavatis. Cystidiis numerosis, 38–56 × 8.5–14.7 μm, ampullaceis, utrififormibus, ventricosis, interdum anguste mucronatis, semper obtusis, tenuitunicatis, in pedicello admodum tenuiter tunicatis, inamyloideis. Cheilocystidiis numerosis et densis in partibus acieis lamellarum, absentibus in aliis, pro medio angustioribus quam pleurocystidia, 47–65 × 5.7–11.2 μm, anguste ventricosis vel utrififormibus vel late utrififormibus vel anguste ampullaceis, hyalinis. **Hyphis** pilei in tramate et in tramate hymenophorali regulari hyalinis, inamyloideis, tenuitunicatis, haud gelatinosis, eis stipitis parallelis vel subparallelis, hyalinis vel subhyalinis, incrustatione pigmenti absente aut haud manifesta, 1.3–15 μm latis (in pileo 1.8–17 μm). **Epicute** tenuissima et interdum disjuncta supra hypodermium pilei, plerumque inconspicua, ex hyphis tenuiter filamentosis, hyalinis efformata. Hypodermio (ut epicutis) cutiformi, hic inde denudato, ex hyphis radialiter dispositis, sed intertextis et nonnumquam furcatis, haud parallelis inter se, 1.3–7.8 μm latis, incrustationibus conspicuis pigmenti sepiaceo-fuliginei obsitis, typicam *C. dryphila* structuram non formantibus,

haud gelatinosis efformato. In zona media stipitis tegumento cystidioso et piloso haud evoluto.

Ad terram in silva typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 29 VI 1977, *Singer B 10028*.

This species is similar to *C. nobilior* Sing. (see above), but it may have more affinity with *C. lodgeae* Sing.

Neoclitocybe ciliata Sing., spec. nov.

Pileo dilute cinnamomeo (“bran” M&P vel subpallidiore) vel avellaneo (13 I 9 M&P), subhygrophano, dehydratione cinnamomeo-pallido vel brunneolo-pallido, glabro sed in fundo umbilici albo-tomentoso et ad marginem extremum fimbriato-ciliato, sub lente minutissime radiatim innate radialiter fibrilloso vel virgato, haud viscido, interdum zonis pallidioribus subzonato, ad marginem breviter pallucide striato vel interdum sulcolato, convexo, fortiter umbilicato, 14–22 mm lato. **Lamellis** pileo concoloribus, confertis vel confertissimis, satis angustis, interdum debiliter intervenosis, arcuatis, decurrentibus. **Stipite** pileo concolori, minute sed manifeste hirsuto-piloso ex toto, aequali, solido, 11–18 × 0.7–1.5 mm. Mycelio basali ad basin disciformiter dilatato tomentoso, sed extra tomentum nullo et tomento non constanter evoluto ita ut stipes insititius vel subinsititius appareat. **Carne** pallida. Odore nullo. Sapore miti, haud farinaceo.

Sporis 6.5–9 × 2.5–3.7 μm, oblongis vel oblongo-cylindraxis, depressione suprahilari instructis, levibus, hyalinis. **Hymenio**: Basidiis 20–25 × 4.7–6 μm, tetrasporis; basidiolis subfusoides, obtusatis. Cystidiis 15–20 × 4–6 μm, ampullaceis vel fusoides-ventricosis, contentu granulato praesente vel absente, phloxinae ope nonnihil intensius rosascentibus quam basidia, ultra basidia haud emergentibus, pariete tenui aut, praecipue ad apicem, firma vel subcrassiuscula instructis, integris, hyalinis. Cheilocystidiis solitariis vel aggregatis, ± 45–70 × 3.2–5.5 μm, filamentosis vel anguste utrififormibus vel ampullaceis, nonnullis subcapitatis, tenuitunicatis, strictis vel flexuosis, hyalinis. **Hyphis** in tramate hymenophorali manifeste regulari partim subparallelis, partim subintertextis, haud gelatinosis, hyalinis, fibulatis, usque ad 5 μm latis, tenuitunicatis vel nonnullis firme vel subcrassiuscule tunicatis (his oleiferis?), inamyloid-

eis. **Epicute pilei** cutiformi, ex hyphis levibus (diverticulis brevibus, hyphosis, raris, sparsis erectis $13-14 \times 3-3.5 \mu\text{m}$), $1-4 \mu\text{m}$ crassis, haud gelatinosis efformata. Ciliis marginis pilei fasciculariter congregatis ex hyphis efformatis, $400-500 \mu\text{m}$ longis, hyphis cheilocystidiis similibus. Tegumento stipitis ex dermatocystidiis piliformibus efformato, his cheilocystidiis similibus, sed nonnullis ex eis latioribus, pariete usque ad $1 \mu\text{m}$ crassa vel tenui instructis, hyalinis, ad apicem obtusis, numerosissimis.

Ad lignum dicotyledoneum in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Itacoatiara, km 65, 8 X 1977, i.e., during a relatively dry season, *Singer B 10183* (INPA).

This species reminds one of the *Clitocybes* with ciliate margin, but it is obviously closer to *Neoclitocybe sanctaerosae* (below).

Neoclitocybe sanctaerosae Sing., spec. nov.

Pileo brunneo, leniter subolivaceo, in siccis fusco ("Madrid"), glabro sed prope et in umbilico tomentosulo, levi, convexo, fortiter umbilicato, $4-6 \text{ mm}$ lato. **Lamellis** sordide pallidis, siccis pileo subconcoloribus, subconfertis vel confertis, angustis vel moderatim latis, ad aciem lateribus concolorem integris, decurrentibus. **Stipite** olivaceo-brunneo, pubescente, subtus tomentososubfurfuraceo, tenui, aequali, insititio, $7-9 \times 0.2-0.4 \text{ mm}$. **Carne** tenui, subinodora.

Sporis $6.7-8 \times 3.2-4 \mu\text{m}$, ellipsoideis vel oblongo-subfusoides, rarius ovoideis, levibus, inamyloideis. **Hymenio**: Basidiis $21.5-22.5 \times 7-7.5 \mu\text{m}$, tetrasporis. Cheilocystidiis $25-35 \times 2.5-5 \mu\text{m}$, simplicibus, integris, filamentosis vel in parte mediana subventricosis vel constrictis, hyalinis. **Hyphis** in tramate pilei anguste filamentosis, fibulatis, inamyloideis. Tramate hymenophorali subhyalino, haud gelatinoso, regulari, ex hyphis filamentosis plus minusve intertextis efformato. **Epicute pilei** cutiformi, ex hyphis filamentosis, levibus sed hinc inde ex crescentia erecta filamentosa brevia, interdum anguste claviculata, frequenter secundario-appendiculata ad latera sua, hyalina, $10-12 \times 1.5-3 \mu\text{m}$ emittentibus efformata; hyphis prostratis $\pm 2 \mu\text{m}$ latis. Hypodermio paullum differentiato, incrustationibus pigmenti nullis. Tegumento stipitis e dermatocystidiis efformato.

Ad ramum arboris dicotyledoneae putrescen-

tem loco humido in silva tropicali ei typi várzea vicina.

TYPUS—Bolivia, Pando, Manuripi, Sta. Rosa, 22 III 1956, *Singer B 2150* (holotypus, LIL; isotypus, BAFC).

Marasmiellus amazoniensis Sing., spec. nov.

A Marasmiello eugeniae Sing. differt sporis minoribus, cheilocystidiis admodum irregularibus.

Ad folia et radicellas Dicotyledonum delapsa in silva pluviali.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, in terra firme vegetation, 18 V 1977, *Singer B 9643* (INPA). Additional collection: near road Manaus-Caracará, km 45, in campinarana vegetation, 28 II 1978, *Singer B 10720* (INPA).

Marasmiellus baesporoides Sing., spec. nov.

Pileo brunneo (14 H 11), pallidiore ad marginem, convexo et umbilicato demum subapplanato et centro leniter depresso, $4.5-8.5 \text{ mm}$ lato. **Lamellis** albis, haud intervenosis, mediocriter latis vel latis, subdistantibus, late adnatis. **Stipite** albedo ad apicem, brunneo ad basin, magis brunneo in vetustis, fibrilloso, plus minusve aequali, insititio, $12 \times 0.4-0.7 \text{ mm}$. **Carne** tenui, inodora.

Sporis $4-5.5 \times 1.5-2.7 \mu\text{m}$, oblongo-subfusoides, tenuissime tunicatis, hyalinis. **Hymenio**: Basidiis $14.5-16 \times 3.8-5 \mu\text{m}$, tetrasporis; basidiolis fusoides. Cystidiis ad latera lamellarum paucis, clavatis vel irregularibus, e. gr. $23.5 \times 8 \mu\text{m}$. Cheilocystidiis ad aciem lamellarum heteromorpham versiformibus, $22-44 \times 3.3-8.7 \mu\text{m}$, frequenter subfusoides et tunc apicaliter mucronatis vel lateraliter appendiculatis aut \pm utriforibus et apicaliter sterigmatiformiter appendiculatis vel ad basin ramosis et obtuse diverticulatis, hyalinis, raro melleis. **Hyphis** fibulatis sed fibulas falsas et septa secundaria etiam exhibentibus, in tramate hymenophorali hyalinis, regulariter dispositis, sed satis intertextis, $5-9 \mu\text{m}$ latis, haud gelatinosis. **Epicute pilei** structurae Ramealium intermittentis inter hyphas integras $3-6 \mu\text{m}$ latas et cutem formantes. Tegumento stipitis ex pilis cystidiformibus numerosis efformato, his erectis, cheilocystidiis simillimis sed pariete firma, hyalina vel mellea instructis et $6-54 \mu\text{m}$ longis.

Ad ramum emortuum dicotyledoneum in silva tropicali inundabili (igapó) aquae nigrae.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 12 III 1980 lectus, *Singer B 12025* (INPA).

This new species is related to *M. baeosporus* Sing.

Marasmiellus bauhiniae Sing., spec. nov.

Pileo cinnamomeo in centro et in sulcis ("Pekinese" M&P), saepe pallidior intra sulcos, hygrophano vel subhygrophano et dehydratione usque ad gilvum pallidum pallescente, interdum magis pallescente in centro, interdum ad marginem, interdum vix pallescente, glabro, in margine usque ad tres quartas radii sulcato, convexo, centro mox applanato, interdum subumbonato vel subumbilicato sed tunc in parte centrali demum leniter depresso, 10–25 mm lato. **Lamellis** pileo concoloribus vel paullum pallidioribus, subconfertis vel distantibus, satis angustis vel mediocriter latis (usque ad 3 mm), haud, raro minime intervenosis, rotundato-adnexis vel adnatis, rarius (in siccis) subdecurrentibus. **Stipite** pallido vel pallide castaneo in parte superiore, subtus castaneo, brunneo vel subsepiaceo, subtiliter pubescente vel laxe vel lereo, pilis pallidis vel ad basin stipitis brunneis ornato, subaequali sed apicem versus frequenter subattenuato et apice extremo saepe dilatato, rarius basin versus subangustato, tubulari 20–31 × 0.7–1.7(–2) mm, insititio, rarius subinsititio. **Carne** pallida, inodora.

Sporis (5.3–)7.2–8.7 × (3–)4–5(–5.3) μm, ellipsoideis, nonnullis ovoideis, levibus, minus convexis ad latus interius quam exterius, hyalinis, inamyloideis. **Hymenio:** Basidiis 20–29 × 5–8 μm, tetrasporis, fibula basali praeditis, rarius destitutis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis ad et prope aciem lamellarum numerosis, anguste vel late ventricosis et appendiculis digitiformibus ad latera vel ad apicem ornatis, 19–55 × 5–15 μm, appendicibus usque ad 21 μm longis et 1.8–2.7 μm diam., hyalinis; plerumque in quantitate variabili paucis vel sat numerosis cheilocystidiis integris appendiculo nullo vel uno apicali tantum praeditis vel cylindraceutis et appendiculis lateralibus brevibus aut apice furcato vel simplici praeditis intermixtis. **Hyphis** stratum gelatinosum in tramate haud formantibus, sed hyphis individualibus interdum subgelatinisatis, tenui- vel firme tunicatis, fibulatis, sed multis septis secundariis

defibulatis praesentibus, inamyloideis. Tramate hymenophorali regulari ex hyphis hyalinis, filamentosis sed ad ramificationibus saepe incrassatis, intertextis efformato. Hyphis stipitis subparallelis inter se, pallide ochraceis, haud incrustatis. Hyphis oleiferis sparsis vel numerosis, saepe melleis (NH₄OH). **Epicute pilei** ex elementis irregularibus, structuram Ramealium haud vel sparse (intermittenter) formantibus et dermatocystidia et ex crescentia hyphalia vel arboriformia sparsa emittentibus, haud gelatinosis, 2–18 μm latis, pariete usque ad 0.7 μm crassa instructis, e pigmento intraparietali stramineis vel pallide cinnamomeo-ochreis, non incrustatis. Hypodermio ab epicute paullum differentiato, subcutiformi, haud incrustato. Tegumento stipitis e dermatocystidiis pili-formibus numerosis efformato, his 29–150 × 5–10 μm, pila *Crinipellis* in mentem revocantibus, sed interdum appendiculis brevibus sparsis lateralibus instructis et pariete 0.7–1.2(–1.5) μm crassa, ad apicem tenuiore praeditis, strictis vel flexuosis, interdum inter se intertextis, apice rotundatis, hyalinis vel subhyalinis, basin stipitis versus brunneotunicatis et interdum secundario-septatis, longissimis.

Ad ramos et truncos nec non ad fructus delapsos putamine ligneo praeditos (e. gr. *Chrysobalanacearum*), frequenter ad *Bauhiniae* ligna in silvis tropicalibus.

TYPUS—Brazil, Amazonas, Manaus, in secondary forest on *Bauhinia* gregarious, 24 IV 1977, *Singer B 9801* (INPA). Additional collection: near road Manaus-Caracará, km 45, on fruits of *Chrysobalanaceae*, 11 VII 1977, *Singer B 10070* (INPA). A collection by *D. Jean Lodge 297* (F) from Costa Rica, Heredia, Puerto Viejo, OTA, 29 XII 1979, is perhaps conspecific.

This species belongs in subsect. *Quercini* Sing.

Marasmiellus cocosensis Sing., spec. nov.

Pileo alutaceo, centro pallide brunneo, subtomentoso, sulcato, convexo, centro applanato, 5–6 mm lato. **Lamellis** pallidis, interdum acie subbrunnescente, latis, subdistantibus, haud intervenosis, subdistantibus (lamellis percurrentibus 16–17), adnatis. **Stipite** brunneolo, macroscopice subglabro, sed partim tomentosulo-subflocculoso sub lente, cavo, insititio, subaequali, 4–7.5 × 0.4 mm. **Carne** tenui.

Sporis 6–8.5 × 2.5–3.5 μm, oblongis, ellipso-

ideo-subfusoides vel oblongo-subcylindraceis, levibus, hyalinis, inamyloideis. **Hymenio:** Cystidiis ad aciem et latera lamellarum praesentibus, ad aciem magis numerosis, ad latera subsparsis vel numerosis, $13-23 \times 7-12.5 \mu\text{m}$, ventricosis vel subvesiculosus vel vesiculosus, rotundato-obtusis ad apicem, interdum uno dactylomorpha appendiculo apicali vel mucrone praeditis (prope marginem pilei etiam multi-appendiculatis), hyalinis, rarius brunneo-hyalinis, tenuitunicatis vel pariete firma (numquam crassa) instructis. **Hyphis** fibulis moderatim frequentibus praevisis sed nonnullis septis primariis et secundariis defibulatis, inamyloideis, haud gelatinosis, in stipite parallelis, plerumque filamentosis pigmento brunneo vel pallide ochreo-cinnamomeo intraparietali, haud incrustante coloratis. **Epicute pilei** structurae Ramealium manifesta sed interdum partim fugaci gaudente, haud cutiformi, sed hypodermio subcutiformi ex hyphis latioribus intertextis, interdum furcatis, pigmento aut haud incrustante, intraparietali aut in paucis cellulis subtiliter ochreo-incrustato, numquam manifeste atro-incrustato. Dermatocystidiis ad marginem pilei sparsis vel raris, cheilocystidiis similibus, sed usque ad $11 \mu\text{m}$ latis, ceterum nullis. Tegumento stipitis ex hyphis ascendentibus tenuibus et dermatocystidiis subtrifurmis admodum versiformibus efformato, his $8-35 \times 2.2-5.8 \mu\text{m}$, saepe ampullaceis vel anguste ventricosis, subclavatis, interdum constrictis vel ad apicem semel vel bis furcatis, hyalinis vel brunneo-hyalinis, raro duobus appendiculis apicalibus dactylomorphis coronatis et tunc usque ad $10 \mu\text{m}$ latis, tenuitunicatis vel firme tunicatis sed haud crassitunicatis.

Ad ligna emortua in silva tropicali.

TYPUS—Costa Rica, Cocos Island, between Chatham and Wafer Bay, 100–232 m alt., December 1981, *Gómez 17974* (F). Additional collection: same locality and date, *Gómez 17982* (F).

This species is related to *M. cystidiosus* Sing.

Marasmiellus californicus Sing., spec. nov.

Pileo brunneo, hygrophano, sicco pallidiore, margine pallide brunneo sed haud albo, glabro, convexo, demum applanato, subacute papillato, 5–9 mm lato. **Lamellis** pallide brunneo-alutaceis, mediocriter confertis (lamellis percurrentibus 12, lamellulis paucis), horizontalibus, mediocriter latis, haud intervenosis, anguste adnexis vel in-

terdum subliberis. **Stipite** brunneo, apice pallidiore, ochraceo-brunneo, subtus brunneo-tomentoso, apicem versus subpallide admodum subtiliter pubescente, subaequali, subsinitio, farcto, $\pm 25 \times 0.7$ mm. **Carne** alba, demum brunneola, inodora.

Sporis $6.5-8.5 \times 3-3.7 \mu\text{m}$, oblongis, levibus, hyalinis. **Hymenio:** Basidiis $17.5 \times 6.5 \mu\text{m}$, tetrasporis, basidiolis fusoides. Cystidiis nullis. Cheilocystidiis sparsis, nonnullis $15-16 \times 5-6 \mu\text{m}$ et ampullaceis, apice interdum subcapitatis, hyalinis; aliis $20-32 \times 3.5-4.2 \mu\text{m}$, hyphiformibus vel cylindraceis, interdum constrictis vel subcapitatis vel bilobatis, brunneolis. **Hyphis** haud gelatinosis, fibulatis, in stipite parallelis, brunneis, pigmento incrustatis, inamyloideis. **Epicute pilei** cutiformi, interdum nonnullis hyphis ascendentibus, sed omnibus levibus, firme vel crasse (usque ad $1 \mu\text{m}$) tunicatis; hypodermio simili; pigmento incrustante brunneo. Tegumento stipitis dermatocystidiis piliformibus formato, his $19-37 \times 4.5-6.8 \mu\text{m}$, frequenter ad basin usque ad $10 \mu\text{m}$ incrassatis, pariete firma vel crassa ($1 \mu\text{m}$), melleis vel brunneis, filamentosis vel cylindraceis vel subulatis vel subclavatis, apice obtusis, interdum una vel duabus constrictionibus instructis, rarius cheilocystidiis ampullaceis similibus; pigmento intraparietali et incrustante.

Ad folia dejecta *Arbuti menziesii* Pursh. et *Sequoiae* et *Lithocarpi* in silvis.

TYPUS—USA, California, San Mateo Co., near road 35, "Alex's Place," 16 VII 1975, *Singer N 7531* (F).

The type belongs in subsect. *Quercini* Sing. and is related to *M. alneus* Sing.

Marasmiellus epitrichialis Sing., spec. nov.

Pileo sordide cinnamomeo-brunneo, uniformiter fere colorato, macroscopice glabro, subsulcato vel levi, convexo, obtuso, haud umbilicato, 4–6.5 mm lato. **Lamellis** albis vel albidis, angustis, haud vel vix intervenosis, subconfertis vel subdistantibus, raro distantibus, stipitem versus angustatis, adnatis vel liberis. **Stipite** cinnamomeo-subpallido, albo-flocculoso vel albedo-flocculoso et simul minute pubescente, aequali, cavo, insinitio vel subsinitio (unilateraliter hyalino-hyphoso sub lente vel nullo modo mycelioso), in adultis e basi gradatim pileo concolori, $13-14 \times 0.2-0.4$ mm. **Carne** tenui, inodora.

Sporis 5.7–6.5 × 2.7–3 μm, ellipsoideis vel oblongis, levibus, hyalinis. **Hymenio:** Basidiis 16.5–17 × 5.7–7 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis 38–43 × 3–6.5 μm, filamentosis vel lanceolatis vel anguste clavatis, apice rotundatis et integris aut furcatis aut usque ad quinque-appendiculatis vel diverticulatis, hyalinis, tenuitunicatis, ex eis acie lamellarum heteromorpha vel prope modum heteromorpha. **Hyphis** haud gelatinosis, fibulatis, tenuiter vel firme tunicatis. **Epicute pilei** subcutiformi, ex hyphis prostratis vel recurvatis, dermatocystidia emittentibus efformata, his erectis, 33–80 × 2–3.8 μm, filiformibus vel ad basin leniter incrassatis, hyalinis, obtusis, pariete 0.1–0.4 μm crassa instructis. Hypodermio ex hyphis subirregularibus, fortiter sepiaceo-incrustatis, 2–10 μm crassis efformato. Stipitis tegumento in flocculis e dermatocystidiis efformato, his e. gr. 36 × 4 μm et cheilocystidiis simillimis; pubescentia e pilis versiformibus, 19–49 × 6–8 μm, sparsis vel subsparis, cylindraceis vel subulatis, interdum mucronatis, ceterum obtusis, pariete 0.2–0.4 μm crassa, raro ad apicem usque ad 2.2 μm incrassata, semper levibus et integris efformata.

Ad folia delapsa, coriacea gregatim in silva ardensa typi campina vel campinarana.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 28 II 1978, *Singer B 10731, 10731a* (INPA).

This species is related to *M. hirtellus* (Berk. & Br.) Pegler and *M. napoensis* Sing.

Marasmiellus eugeniae Sing., spec. nov.

Pileo albo, macroscopice glabro, sub lente minutissime subhispido, per tertiam partem radii subsulculato, convexo, mox centro depresso, demum subappianato, 2.5–3 mm lato. **Lamellis** albis, angustis vel mediocriter latis, subdistantibus vel distantibus, interdum nonnullis furcatis, horizontalibus vel subarcuatis, subliberis vel adnato-subdecurrentibus. **Stipite** albo, interdum pallide griseolo ad apicem, siccando ad basin cinnamomeo in vetustis, sub lente fibrilloso-subhispidulo et sericeo ad basin, macroscopice subglabro, aequali vel subaequali, insititio, 4.5–5 × 0.2 mm. **Carne pilei** alba, tenui, inodora.

Sporis 10–14 × (4)4.5–6 μm, plerumque ± 12–12.5 × 5–5.5 μm, oblongis vel fusoides, levibus, inamyloideis. **Hymenio:** Basidiis 25–49 × 7–11.5 μm, tetrasporis; basidiolis vix manifeste fusoides.

Cystidiis nullis. Cheilocystidiis, 25–37 × 10–24 μm, multis vel omnibus fere pro ratione latis, ventricosis vel subvesiculososis et saepe longe pedicellatis, ad apicem vel in parte majore superna multiappendiculatis, appendiculis (1–)1.5–8 × 0.8–1.7 μm, pariete tenui, hyalina praeditis, reliquis magis irregularibus et ramosis, structurae Ramealium instar et secundarie diverticulatis, 10–30 × 6–9.5 μm, interdum perpaucis. **Hyphis** filamentosis, aliis usque ad 22 μm latis sed inter septa moderatim longis, haud gelatinosis, inamyloideis, defibulatis, in pileo tenuitunicatis, in stipite subparallelis. Tramate hymenophorali regulari. **Hyphis oleiferis** moderatim numerosis, 1.5–9.5 μm latis, refringentibus. **Epicute pilei** et hypodermio hyalinis, ex hyphis intertextis, diverticulatis (diverticulis e. gr. 4 × 1.5 μm), usque ad 16 μm latis efformatis et structuram Ramealium formantibus. Dermatocystidiis marginem pilei versus sparsis vel raris, e. gr. 25–30 × 12 μm, subclavatis vel subventricosis, integris vel (ut cheilocystidia) appendiculatis, omnibus tenuitunicatis, hyalinis. Tegumento stipitis e dermatocystidiis et hyphis criniformibus admodum versiformibus efformato.

Ad ligna arborum dicotyledonearum, e. gr. *Eugeniae citrifoliae* Poir. in silvis tropicalibus typi terrae firmae et campinae-campinaranae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 23 VI 1977, *Singer B 10010* (INPA). Additional collection apparently conspecific: Brazil, Amazonas, road Manaus-Caracará, km 45, in campinarana, *Singer B 11359* (INPA).

This clampless species is related to *M. defibulatus* Sing., from which it differs in much larger spores. We have, however, collected a somewhat intermediate form between *M. defibulatus* and *M. eugeniae* Sing. which has spores 8–10.5 × 3–4.2 μm, mostly 10–10.5 × ± 3.5 μm. Although I did not separate this form from *M. eugeniae* at first sight, it turns out to be separable from the latter because of more irregular cheilocystidia and different habitat. Consequently, this intermediate form is now considered to be a different, new species, *M. amazoniensis* Sing., which see above.

Marasmiellus helminthocystis Sing., spec. nov.

Pileo primum dilute avellaneo, mox albo, immo candido vel centro pallide fuscido, demum sordido, grisello, primum fibrillis pilisque densis oblecto, praesertim in centro, demum glabrescente,

pellucide striato, demum sulcato-virgato (lineis sordide subcinnamomeis et pallidis), haud hygrophano vel demum subhygrophano, convexo, frequenter umbonato, dein obtuso et in centro anguste vel ample depresso sed haud profunde nec umbilicato-depresso, 7.5–11.5 mm lato. **Lamellis** albis, interdum grisello-albidis, immutabilibus, in juvenilibus distantibus vel subdistantibus, dein subdistantibus vel confertiusculis, lenissime laeque subintervenosis vel haud intervenosis, sed interdum furcatis, raro anastomosantibus, interdum demum incrassatis (parasitae causa?), angustis vel subangustis, adnatis, interdum secedentibus. Sporis in massa candidis. **Stipite** albo, subtiliter velutino vel pubescente, ut minime sub lente viso, sed demum glabrescente, e basi dilatata discoidea nato, centrali vel subcentrali, rarius subexcentrico, aequali, primum solido, 0.7–14 × 0.1–0.7 mm. Mycelio basali vix formato. Velo albo, pileum juvenilius et stipitem usque ad basin strato sericeo vel tomentoso obtegente sed fugacissimo, neque anulum neque volvam formante. Hymenio primordii clauso; evolutio carpophororum velangiocarpica vel paravelangiocarpica. Fractura carpophororum in substrato cavitates minutae, albae ut in *M. coilobasis* frequenter observantur. **Carne** alba, immutabili, tenui, inodora.

Sporis 8.5–16 × 3.3–6 μm, fusioideis vel fusideo-oblongis, (Q = 2.5–3.9), depressione suprahilari plerumque instructis, tenuitunicatis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis tetrasporis, rarius (2–3)-4-sporis, 25–42 × 9–10.5 μm; basidiolis et fusioideis et haud fusioideis praesentibus. Cystidiis nullis. Cheilocystidiis sparsis vel raris, (30–)37–110 × 1.7–3.5 μm, filamentosis, sed ad basin ipsam cepiformiter vel ventricose incrassatis, longissime effilatis, diametro partis basalis (± 10 μm alto) 3.5–10 μm, parte effilata interdum absente, si praesens obtusa, omnibus cheilocystidiis hyalinis, ± tenuitunicatis (pariete 0.2–0.3 μm, raro usque ad 0.9 μm diam.), contentu visibili nullo. **Hyphis** filamentosis vel cylindraceis, 3–12 μm diam. et inter septa vix notabiliter longis, haud vel vix gelatinosis, inamyloideis, fibulatis (sed nonnullis septis simplicibus praesentibus). **Epicute pilei** propria ex hyphis repentibus eformata sed strato velari structura Ramealium moderatim evoluta eformato obtecta; dermatocystidiis praesentibus, cheilocystidiis similibus. In superficie stipitis multis dermatocystidiis eis pilei simillimis praesentibus, in ambobus parte effilata frequentius reducta quam in cheilocystidiis.

Ad frondes aliaque fragmenta delapsa vel pu-

trescentia Monocotyledonum gregatim, e. gr. ad Palmas et Musaceas.

TYPUS—Brazil, Amazonas, Ponta Negra, 8 IV 1978, *Singer B 10963* (INPA). Additional collections: Manaus, 17 V 1977, *Singer B 9886* (INPA); same locality, 15 XII 1978, *Singer B 11439* (INPA); same locality, 16 XII 1978, *Singer B 11441* (INPA); Peru, San Martín, Tocache Nuevo, 550–650 m alt., 12 XII 1981, *Plowman, Schunke V., Rury 11338* (F).

This species belongs in sect. *Candidi* (Bat.) Sing. and is related to *M. albuscorticis* (Secr.) Sing. which differs in the shape of the cystidia and the thickness of the stipe as well as the absence of gray discolorations in the lower part of the stipe; it also has quite different habitat and geographical distribution. *Marasmiellus helminthocystis* also differs from *M. coilobasis* (Berk.) Sing. in scarcely intervenose lamellae, presence of dermatocystidia on the pileus, differentiated cheilocystidia and absence of (pleuro-)cystidia and different dermatocystidia of the stipe; it also differs in habitat. *Marasmiellus volvatus* differs in the development of the veil which leaves a distinct volva at the base of the stipe and does not show an even moderately developed Rameales structure in young specimens; furthermore, it grows on Dicotyledones, not on Monocotyledones.

Marasmiellus hypolissus Sing., spec. nov.

Pileo albo, levi, glabro, convexo, demum concavo et unduloso, 1.2–1.4 mm lato. **Lamellis** subnullis, sed demum venis nonnullis admodum distantibus et paucis ad ipsum marginem percurrentibus, subdecurrentibus, superficie hymeniali alba. **Stipite** albo, glabro, levi, glabro, ad basin attenuato, ad ipsam basin disciformiter dilatato, anguste cavo, 4 × 0.3 mm. Mycelio basali nullo. **Carne** alba, tenui, immutabili.

Sporis 6–7 × 3.5 μm, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiolis fusioideis et cum basidiis ad basin fibulatis. Cystidiis et cheilocystidiis nullis vel rarissimis. **Hyphis** filamentosis, multis septis fibulatis, nonnullis simplicibus, tenuitunicatis, inamyloideis, haud gelatinosis. Tramate hymenophorali regulari(?) sed admodum reducto. **Epicute pilei** ex hyphis plerumque prostratis, disperse et sparsissime excrescentia brevissima spiniformia emittentibus, hy-

alini efformata; structura Ramealium nulla. Tegumento stipitis depilato.

Ad radicellas mortuas in silva tropicali typi terrae firmae primariae, raro et solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 18 I 1978, *Singer B 10540* (INPA).

This species appears to belong in sect. *Dealbati* subsect. *Dealbatini* Sing., but its position in *Marsmiellus* is somewhat doubtful since the subdecurrent lamellae may indicate some relationship with *Neoclitocybe* Sing.

Marasmiellus illinorum Sing., spec. nov.

Pileo in centro brunneo ("centennial Br" M&P), ad marginem ochreo-albido, subhygrophano, glabro, levi vel ad marginem brevissime (2–3 mm) sulcatulo sed in siccis semper leviusculo, convexo, centro mox depresso, 5–11 mm lato. **Lamellis** albis vel cremeo-albis, confertis, haud furcatis, haud intervenosis, multis lamellulis insertis, anguste adnexis vel subliferis. **Stipite** ad apicem pallido, inter apicem et basin rubro-brunneo ("henna" M&P) et ad ipsam basin atrocasterneo ("Mandalay" M&P), pruinato, insititio, centrali gradatim leniter basin versus attenuato, 10–40 × 0.6–0.9 mm. **Carne** in pileo et apice stipitis alba, tenuissima, inodora.

Sporis 6–6.5 × 2.5–3 μm, fusoides vel oblongis vel oblongo-ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 16–24 × 5–6.2 μm, tetrasporis, basidiolis plerumque (haud omnibus) fusoides. Cystidiis nullis. Cheilocystidiis numerosis, 23–26 × 6–8 μm, versiformibus, generatim ad apicem et ad latera aut ad apicem tantum uno vel quatuor appendiculis digitaliformibus brevibus vel moderate longis ornatis, omnino hyalinis, tenuitunicatis, corpore basali nec non appendiculis obtusis. **Hyphis** in tramate pilei hyalinis, radiatim dispositis, tenuitunicatis, haud gelatinosis, fibulatis, inamyloideis. Tramate hymenophorali regulari. **Epicute pilei** structurae Ramealium debilis vel intermittens, hyphis nonnulla excrescentia diverticuliformia sed minuta vel lata obtusaque et pilis stipitis breviora emittentibus, hyalinis vel subhyalinis in parte marginali pilei, in centro pilei et in hypodermio pigmento ochraeo intraparietali sed vix incrustante coloratis. Tegumento stipitis e pilis erectis, simplicibus, integris, hyalinis, numerosis, pariete 0.2 μm crassa,

rarius usque ad 1.5 μm crassa instructis, numerosis, 13–57 × 5.5–8.5 μm, cylindraceis vel ampullaceis, interdum flexuosis, obtusis efformato.

Ad lignum ramulorum quercinorum et ad alia ligna dicotyledonea gregatim sed haud dense aggregate in silva prope rivulas.

TYPUS—USA, Illinois, Highland Park, 6 VIII 1972, *Singer N 4152* (F).

This North American species belongs in sect. *Dealbati* subsect. *Quercini* Sing. and is related to *M. bauhinae* Sing. and *M. hirtellus* (Berk. & Br.) Pegler, but seems to be somewhat intermediate between the *Quercini* and sect. *Rameales* (Lange) Sing., especially the stirps *Subramealis*, from which it differs in the poorly developed Rameales structure of the pileus, shorter spores, different hairs on the surface of the stipe, and different habitat and distribution. *M. gomezpompae* is larger, with much longer spores and relatively longer stipe than that of *M. illinorum* Sing.

Marasmiellus latispermus Sing., spec. nov.

Pileo albo, lamellis albis haud intervenosis, distantibus, stipite griseo in adultis, e subcentrali excentrico vel sublaterali.

Sporis 9–11.5 × 6–8.5 μm, late ellipsoideis. Ad Bambuseas (*Chusquea* spec.).

TYPUS—Peru, Cuzco, Machu Picchu, 20 V 1958, *Singer B 3026* (holotype, BAFC; isotype, LIL).

This species has been confused with the holotype of *M. schiffneri* Bres. in Höhnle and was under the latter name described in Beih. Nov. Hedw. 44: 216. 1973. The holotype of *M. schiffneri* (wu) has been revised by me. It differs in its spore characters and has been described by me under the name *M. oblongisporus* Sing. (l.c. p. 254, no. 109). Thus, *M. oblongisporus* Sing. is a synonym of *M. schiffneri*.

Marasmiellus lecythidacearum Sing., spec. nov.

Pileo dilute vel atro-brunneo, hygrophano, praesertim in zona sulcata et in centro (humido "cookie" M&P vel obscurius colorato, dehydratione "polar bear" M&P vel subalbido), macroscopice glabro sed sub lente tomentosulo, pelu-

cide striato vel sulcato (et obscuriore in sulcis), sexta parte radii, in centro levi nec striato, convexo, centro mox depresso vel subumbilicato, nec profunde umbilicato nec papillato umbonato, 7–19 mm lato. **Lamellis** vegetis et siccis haud candidis sed pallide griseolo-brunneolis (“tansan,” “suntan,” “almond” M&P), angustis vel sublatiusculis, subconfertis vel subdistantibus vel distantibus, plerumque subdistantibus, haud intervenosis, arcuatis vel frequentius, ut minime in adultis, horizontalibus, adnatis vel adnexis, rarius subdecurrentibus. **Stipite** albo, mox e basi brunnescente et ad basin ipsam plerumque atrobrunneo vel griseo-cinnamomeo, in siccis ad apicem “lariat” (M&P), ad basin “Caucasia” (M&P) vel nonnihil obscuriore, macroscopice subglabro, sed sub lente manifeste sericeo-fibrilloso vel pubescente, stricto vel curvato, insititio, aequali vel ad basin leniter incrassato vel apicem versus subattenuato, 8–18 × 0.5–1 mm. **Carne** inodora.

Sporis (5.5–)6.7–9.5 × (2.3–)3–3.8 μm, plerumque 7.5–9 × 3.3–3.6 μm, oblongis vel paucis ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 18–27 × (5.5–)5.7–7.5 μm, tetrasporis, interdum (1–2–3–)4-sporis et tunc sterigmatibus usque ad 9 μm longis; basidiolis fusoides. Cystidiis ad aciem lamellarum et ad latera aut aciei proxima aut usque ad spatia interlamellaria praesentibus, 20–70 × 4–11.5 μm, plerumque 25–35 × 6–8 μm, versiformibus, plerumque simplicibus et integris sed semper nonnullis bivel trifurcatis vel multiappendiculatis (appendiculis diverticuliformibus, usque ad septem, e. gr. 3 × 1.5–2 μm) praesentibus, interdum mucronatis (mucrone e. gr. 4–10 × 2–3.5 μm vel longe filiformi) ceterum plerumque ventricosis, clavatis, cylindraceutis, in integris ad apicem obtusis, sed ad latera lamellarum frequentier acuminatis vel basidioliformibus (sed basidiolis majoribus), hyalinis, tenuitunicatis. **Hyphis** haud gelatinosis, fibulatis, inamyloideis. Tramate hymenophorali regulari, ex hyphis saepe tenuiter pigmento incrustatis, partim intertextis efformato sed interdum incrassatione vix visibili et omnibus hyphis hyalinis vel subhyalinis. **Epicute pilei** cutiformi, structuram Ramealium intermittenter tenuem vel vix evolutam formente, hyphis diametri variabilis, interdum recurvatis sed plerumque horizontalibus, paucis brunneo-incrustatis vel crystalline incrustatis, pariete incolori, interdum extenuatis vel sparse nodulosis, sed plerumque levibus, multis latiusculis. Hypodermio ex hyphis hyalinis vel subhyalinis, nonnullis pigmento brunneo-incrustatis efformato. Tegumento stipitis e dermatocystiis pilifor-

mibus vel cystidiis hymenialibus similibus, 11–70 × 3–7 μm, aliis cylindraceutis, aliis utriformibus vel ampullaceis, interdum appendiculo vel appendiculis paucis lateralibus vel apicalibus ornatis, tenuitunicatis, interdum sparsis efformato.

Ad lignum dicotyledoneum, plerumque Lecythidacearum, e. gr. *Eschweilera* sp. in silvis tropicalibus typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 10 X 1977, *Singer B 10197* (INPA). Additional collections: same locality, 21 IV 1977, *Singer B 9742* (INPA); same locality, 23 III 1978, *Singer B 10832* (INPA); same locality, 26 XII 1977, *Singer B 10401* (INPA).

This species is, like *M. illinorum*, somewhat intermediate between sect. *Dealbati* subsect. *Quercini* and sect. *Rameales* subsect. *Ramealini*, but its affinity is with *M. dendroegrus* Sing.

Marasmiellus leucophyllus Sing., spec. nov.

Pileo alutaceo grisello, sicco argillaceo, opaco subtomentosoque in centro, levi, dein lenissime sulcato ad marginem, convexo, in maturis centro depresso, obtuso, 2.5 mm lato. **Lamellis** albis, siccis etiam albis, ad aciem albis, decem lamellis percurrentibus et octo lamellis, mediocriter latis, haud intervenosis, late adnatis. **Stipite** subcastaneo sed apicem versus pallidiore vel pallido, basin versus sericeo-pruinato, ad apicem subglabro vel glabro, cavo, curvato, centrali, aequali vel basin versus subattenuato, ± 4.5 × 0.2 mm insititio. **Carne** albida, tenui, odore haud manifesto.

Sporis 6.5–8.5 × 2–2.7 μm, lanceolatis vel lanceolato-subcurvatis, fusoides vel subcylindrico-oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 17–23 × 6.8–7.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham 26–30 × 8.5–13 μm late ventricosis vel ventricoso-clavatis, tenuitunicatis, ad apicem setulis sat numerosis divergentibus 2–7 μm projiicientibus ornatis, ex toto hyalinis, paucis subvesiculososis vel magis irregularibus. **Hyphis** hyalinis, in stipite pallide brunneis vel fusciculis et nonnullis crassitunicatis, parallelis, plerumque filamentosis, fibulatis. **Epicute pilei** manifeste fortiterque coralloidea typi structurae Ramealium sed ex hyphis maxima e parte repentibus, nonnullis diverticulis furcatis, omnibus hyalinis efformata, nonnullis dermatocystidiis cheilocystidiis similibus praesentibus. Hypodermio spadiceo vel

atrobrunneo e pigmento manifeste incrustante. Tegumento stipitis in eius parte inferiore ex elementis piliformibus et dermatocystidiis efformato; elementis piliformibus $35-140 \times 3-5 \mu\text{m}$, apicem versus attenuatis, effilatis, $0.5-2 \mu\text{m}$ latis, flexuosis, immo in spiram collectis, acutis vel obtusis, tenuitunicatis; dermatocystidiis exiguis, $8-12(-25) \times 2-3(-5) \mu\text{m}$, hyalinis, utrififormibus vel cylindraceis vel clavatis, obtusis, tenuiter vel firme sed haud crasse tunicatis.

Ad ramulos delapsos arboris dicotyledoneae in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 17 V 1977, *Singer B 9645* (INPA).

Marasmiellus albifolius Sing. differs in the characteristics of the cheilocystidia and the habitat; *M. incrustatus* Sing. differs in the color of the lamellae (not white) and smaller spores. Both differ in the color of the pileus.

Marasmiellus lysochlorus Sing., spec. nov.

Pileo brunneo, subhygrophano, in siccis cinnamomeo margine pallidiore, in vegetis ruditer sulcato, in siccis sublevi, glabro, convexo, papillato, 4–5 mm lato. **Lamellis** ex integro sordide albidis vel sordide pallidis, sat angustis, distantibus, adnexus. **Stipite** brunneo, pallidiore basin versus, macroscopice pruinato, sub lente albobiloso-pubescente, cavo, insititio, aequali, $\pm 9 \times 0.5 \text{ mm}$. **Carne** brunneo-pallido, tenui, odore haud manifesto.

Sporis $7.2-8.4 \times 2.8-3.5 \mu\text{m}$, oblongis vel subcylindraceis, levibus, hyalinis, inamyloideis, nonnullis guttulis oleaginis repletis, depressione suprahilari instructis. **Hymenio**: Basidiis $24 \times 6 \mu\text{m}$, tetrasporis; basidiolis haud manifeste fusioideis. Cheilocystidiis ad aciem et prope aciem heteromorpham $21-27 \times 5-7.5 \mu\text{m}$, utrififormibus, constrictionibus vel constrictione $2.5-5 \mu\text{m}$ diam., levibus et integris, simplicibus, obtusis, hyalinis, tenuitunicatis. Cystidiis veris haud differentiatis. **Hyphis** subhyalinis vel hyalinis, haud gelatinosis, fibulatis, inamyloideis. **Epicute pilei** ab hypodermio paullum differentiatis, cutiformi sed \pm intertexto, ex hyphis pigmento fuligineo granuloso-incrustatis, sed granulis in KOH dissolutis et solutionem viridulam producentibus, ita ut pigmentum Collybiae alkalivirentis in mentem revocent, efformata. Tegumento stipitis e dermatocystidiis piliformibus hyalinis erectis et prostratis

efformato, his $45-86 \times 4-4.2 \mu\text{m}$, cylindraceo-subfiliformibus, nonnullis ad vel prope basin usque ad $5 \mu\text{m}$ dilatatis, pariete tenui vel firma (usque ad $0.5 \mu\text{m}$ crassa) et apice rotundato instructis.

Ad folia dicotyledonea in silva tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 21 IV 1977, *Singer B 9772* (INPA).

This belongs in subsect. *Quercini* Sing. The green discoloration of the pigment in KOH is the same as observed in *Marasmiellus potassiovirens* Sing., *Neoclitocybe portentosa* Sing., in several species of *Collybia*, and in all of *Anthrachophyllum*. Aside from the tribus *Collybieae*, this greening occurs also in some species of *Crinipellis*.

Marasmiellus minutalis Sing., spec. nov.

Pileo in centro ochraceo-cinnamomeo, ad marginem albo, macroscopice glabro, sub lente tomentoso, sublevi, convexo, obtuso, haud umbilicato, 1.5–4 mm lato. **Lamellis** albis, sublatis, haud vel vix intervenosis, 8–12 percurrentibus, adnexus vel adnatis. **Stipite** concolori pilei centro basin versus et pilei margini apicem versus, distanter vel dense flocculoso, flocculis minutis basin versus densioribus, sursum vel subtus attenuato, insititio, $2-6 \times 0.1-0.3 \text{ mm}$. **Carne** tenui, inodora.

Sporis $(5.5-6.3-7.3 \times 2.5-3 \mu\text{m})$, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $21-22 \times \pm 6 \mu\text{m}$; basidiolis fusioideis. Cystidiis nullis. Cheilocystidiis ad aciem lamellarum heteromorpham $24-31 \times 8.5-21.5 \mu\text{m}$, subvesiculososis vel clavatis, totis vel sursum tantum setulis brevibus obtusis et/aut appendiculis digitiformibus typi Rotalis modo ornatis, omnino hyalinis vel vix brunneolo-hyalinis, interdum pedicellatis, appendiculis usque ad $7.5 \mu\text{m}$ longis, tenuitunicatis. **Hyphis** omnibus inamyloideis, haud gelatinosis, in pileo tenuitunicatis, in stipite parallelis, fibulatis. **Epicute pilei** ex hyphis structuram Ramealium manifestam formantibus sed hac interdum diverticulis sat latis, obtusis, rarius haud densis notata et dermatocystidiis plerumque numerosis cheilocystidiis simillimis interspersa, hyalina vel brunnea. Hypodermio magis colorato pigmento intraparietali sed vix vel minime et sparse incrustante, ochraceo vel brunneolo, sed ad marginem pilei subhyalino. Tegumento stipitis ex hypharum cellulis terminalibus, cystidiformibus aggregatis, $4.3-$

13 μm latis, ventricosis vel cylindraceutis, frequenter ita ut cheilocystidia appendiculis paucis vel pluries numerosis ornatis atque tenuinunicatis, apice rotundato-obtusis, frequenter ad basin furcatis, ad apicem stipitis saepe subhymeniformiter condensatis, inamyloideis, pigmento haud incrustatis efformato.

Ad folia Dicotyledonum delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (EMBRAPA), 29 VI 1977, *Singer B 10022* (INPA, as "*M. brasiliensis* var. *minutalis*"). Additional collection: Ibid., 14 VI 1977, *Singer B 9939/41*.

Intermediate between *M. brasiliensis* (Berk. & Mont.) Sing. and *M. subramealis* var. *julius* Sing., this species is distinguished because of its habitat and the small size of the carpophores.

Marasmiellus pantholocystis Sing., spec. nov.

Pileo albo, subglabro vel tomentosulo, levi, opaco, convexo, obtuso, in siccis \pm 9 mm lato, circumferentia elliptica. **Lamellis** albis, distantibus, octo lamellis percurrentibus, fortiter intervenosis. **Stipite** albo, basin versus attenuato, insititio, excentrico, \pm 2 \times 0.5 mm. **Carne** alba.

Sporis (6.7–)9–10.8 \times (3.3–)4.5–5.2 μm , ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 21–31 \times 6.8–8.7 μm , tetrasporis. Cystidiis nullis. Cheilocystidiis inter basidia subsparis, \pm 30 \times 11.5 μm vel 18–31 \times 1.7–11.5 μm , admodum versiformibus, subfilamentosis vel vesiculosis, saepe fusioideis vel utrififormibus, ventricosis, etc., pariete tenui vel firma, numquam crassa instructis, acutis vel frequentius apice rotundato-obtusis, rarius 1–2 appendiculis sterigmatomorphis apicalibus ornatis, hyalinis. **Hyphis** haud gelatinosis, filamentosis, fibulatis, 3.5–5.5 μm latis, pariete 0.3–1 μm crassa instructis. **Epicute pilei** hyalina, ex hyphis repentibus efformata, sed intermittenter debilem structuram Ramealium formante ex excrescentiis superficialibus versiformibus semiglobatis, filiformibus vel cylindraceutis vel anguste claviformibus vel cystidiformibus, 1.5–20.5 \times 1.7–2.5 μm , cystidiformibus paucis, exiguis, circumferentia nodulososalebrosa. Tegumento stipitis structura simili gaudente.

Ad ramulum dicotyledoneum in silva tropicali ("Niederwald").

TYPUS—Indonesia, Pulo-Penang, *Wawra 1407* (w).

This species is an Asiatic representative of sect. *Marasmiellus* subsect. *Inodermatini* Sing.

Marasmiellus potamogeton Sing., spec. nov.

Pileo brunneo ("cookie" vel "burnt umber" M&P), marginem versus pallidiore, margine extremo interdum albedo, toto levi, radiatum innate radialiter fibrilloso, convexo vel irregulariter convexo, primum subumbonato dein obtuso vel applanato in centro, margine demum saepe recurvato, 20–21 mm lato. **Lamellis** albis, confertis, angustis, haud vel vix intervenosis, liberis. **Stipite** fuscidulo ("terrapin" M&P), ex toto albo-pubescente sed ad basin atrocastaneo-pubescente, raro atrocastaneo, subfuliginoso, sed tunc gradatim pallidiore apicem versus, aequali, insititio, 50–61 \times 1.7–2 mm. **Carne** tenui, subinodora.

Sporis 5.5–7.5(–8) \times 2–2.5(–3) μm , oblongis, levibus, hyalinis. **Hymenio:** Basidiis 15 \times 5 μm , tetrasporis; basidiolis fusioideis. Cystidiis ad latera lamellarum sparsis, ad aciem numerosis inter basidia et basidiola, 27–58 \times 6.5–11 μm , plerumque fusioideis, interdum 1–2 appendiculis sterigmatomorphis apicalibus ornatis, paucis longe hyphose effilatis, sed permultis integris et apice obtusis, hyalinis, pariete subtenui (interne frequenter haud bene delimitata). **Hyphis** hyalinis, haud gelatinosis, filamentosis sed nonnullis sublatis, pariete tenui vel firma instructis, fibulatis, eis stipitis parallelis, pallide brunneolis, haud pigmento incrustatis, multis septis secundariis simplicibus observatis. Tramate hymenophorali regulari. **Epicute pilei** cutiformi, ex hyphis angustis pariete hyalina, tenui, sed in nonnullis partibus brunneo-incrustata instructis, hyphas vix ascendentes acutas vel obtusas haud incrustatas in fasciculis emittentibus efformata. Hypodermio cutiformi, ex hyphis plerumque latioribus, pigmento verruciformiter saturate brunneo incrustatis, usque ad 9 μm latis efformato. Tegumento stipitis piloso, pilis 100–270 \times 3–3.5 μm , filamentosis, e hyphis verticalibus exterioribus stipitis cum aut sine septo natis, hyalinis, obtusis vel acutis, tenuinunicatis, densis, saepe 1–3-septatis. Pigmento KOH ope haud virescente.

Ad lignum emortuum dicotyledoneum gregatim in silva inundabili aquae albae (typi várzea).

TYPUS—Brazil, Amazonas, Paraná do Janauacá near Lago do Castanho, 23 V 1980, *Singer B 12178* (F).

Marasmiellus potamogeton Sing. is macroscopically similar to *Collybia phylladophiloides* Sing., but differs in evidently insititious base and comes close to *M. lecythidacearum* Sing.

***Marasmiellus potassiovirens* Sing., spec. nov.**

Pileo ochraceobrunneo, glabro vel subglabro, striato vel (in siccis) sulcatulo per medium radium, convexo, obtuso, centro demum applanato, 11–12 mm lato. **Lamellis** pallidis, subconfertis vel subdistantibus, haud intervenosis, mediocriter latis vel sublatis, anguste adnexas vel subliberis. **Stipite** pallido apicem versus, castaneo basin versus, ex toto pruinato e pruina pallida, aequali, insititio, $\pm 13 \times 1$ mm. **Carne** alba, tenui, inodora.

Sporis 6–7.5 \times 3.5–4 μ m, ellipsoideis, levibus, hyalinis. **Hymenio:** Basidiis 21–24 \times 6 μ m; basidiolis fusioideis, fibula basali destitutis. Cystidiolis dimorphis (1) cheilocystidiis similibus, (2) 21–32 \times 5–6 μ m, fusioideo-subventricosis vel subampullaceis vel anguste utriformibus, tenuitunicatis, hyalinis. Cheilocystidiis numerosis, ad aciem lamellarum subheteromorpham, 17–22 \times 7.5–10.5 μ m raro longioribus, vesiculososis vel late ventricosis, integris, ad apicem late rotundatis, hyalinis, tenuitunicatis. Cystidiis veris haud visis. **Hyphis** defibulatis, haud gelatinosis. Tramate hymenophorali regulari. **Epicute pilei** ei *Marasmielli lysochlori* simili, ex hyphis intertextis intermittenter ruditer coralloideo, hyphis partim asendentibus, excrescentiis bulbosis et diverticulis latiusculis hinc illinc dilatatis, multis pigmento brunneo incrustatis. Hypodermio cutiformi, satis latis (e. gr. 10.5 μ m latis), hyphis manifeste incrustatis; pigmento incrustante sepiaceo-subfulgineo in KOH colore chlorino vel pallide viridi dissoluto, et solutione alias hyphas invadente. Tegumento stipitis e dermatocystidiis efformato, his cheilocystidiis similibus sed variabilioribus, nonnullis cystidiola in mentem revocantibus, 30–70 \times 6.5–15 μ m, omnibus rotundato-obtusis ad apicem.

Ad truncum vivum arboris, *Duckeodendron* aut *Minquartia*, circa 1 m supra terram, gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 21 IV 1977, *Singer B 9782* (INPA).

M. picipes (Murr.) Sing. is related but *M. lysochlorus* Sing. (with clamp-bearing hyphae) should also be compared.

***Marasmiellus rosascentifolius* Sing., spec. nov.**

Pileo brunneo vel sordide cinnamomeo-brunneo, dense innate radialiter fibrilloso (ut minime sub lente et disco excepto), per medium radium sulculato vel sulcato, convexo, demum applanato et centro nonnihil depresso, 18–23 mm lato. **Lamellis** pallidis sed in juvenilibus siccando laete salmoneo-roseis, confertis vel confertissimis, haud vel vix intervenosis, angustis, dein mediocriter latis, liberis vel subliberis. **Stipite** atrocastaneo sed apice pallido, apice in juvenilibus siccando rosascente, ad apicem subtiliter pruinoso vel pubescente, ceterum piloso-hispido, e centrali vel subcentrali dein frequentissime excentrico, stricto, obliquo vel verticali, sed numquam sublaterali, rarius curvato, aequali, insititio, 11–14 \times 0.8–3 mm. **Carne** tenui, inodora.

Sporis 8–10 \times 3.5–5 μ m, amygdaliformibus vel oblongis, levibus, hyalinis, guttula centrali exuguo globoso. **Hymenio:** Basidiis $\pm 23 \times 6.7$ μ m, tetrasporis. Cystidiis nullis. Cheilocystidiis in acie lamellarum heteromorpha numerosis, 25–40 \times 5–8 μ m, cylindraceis vel anguste ampullaceis, raro subcapitatis, rarius subventricosis, obtusis, tenuitunicatis, marginem pilei versus brevioribus quam prope stipitem, hyalinis, omnibus integris et simplicibus. **Hyphis** tramatis pilei hyalinis, stipitis brunneolo-hyalinis et parallelis, non gelatinosis, tenuitunicatis, fibulatis. **Epicute pilei** structurae Ramealium vix manifestae, tenuis, intermittens modo in strato supremo, partim intertextis hyphis latioribus pauca diverticula manifesta emittentibus consistente sed in parte inferiore cutiformi, hyphis haud vel tenuissime pigmento incrustatis sed pigmento intraparietali frequenter manifesto. Hypodermio cutiformi pigmento simili colorato et ab hyphis tramatis pilei hoc pigmento tantum differente. Tegumento stipitis ad eius apicem e pilis cystidiformibus numerosis, 50–64 \times 4.8–8.5 μ m, cheilocystidiis similibus efformato. Pilis basis stipitis similibus sed plerumque cylindraceis, densioribus, brunneolo-hyalinis vel pallide brunneolis.

Ad stipulas et ramulos ligneos dicotyledoneos in silva tropicali primaria typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 IV 1978, *Singer B 10905* (INPA). Additional collections: Manaus, 22 IV 1977, *Singer B 9789* (INPA); same locality, 1 II 1978, *Singer B 10588* (INPA). These collections seem identical because the lamellae reddened (“tomato R,” “arabesque” M&P) on drying.

The lamellae and the stipe, turning reddish when drying, remind one of *M. aurantiorufescens* Sing., but the eventually eccentric stipe and the larger spores are different. If *Singer B 9789* and *Singer B 10588* are indeed identical with the holotypus of *M. rosascentifolius*, the eventual eccentricity of the stipe is not a constant characteristic.

Marasmiellus subhirtellus Sing., spec. nov.

Sporis (6–)7.5 × 3–3.3 μm et cheilocystidiis haud noduloso-diverticulatis et pilis stipitis 16–70 × 6.5–9 μm tenuitunicatis et subhyalinis (nec crasse tunicatis et pallide brunneis) a *M. hirtello* (Berk. & Br.) Pegler recedit (cf. Pegler, Kew Bull. Add. ser. 6: 130. 1977).

Ad stipulas et ramulos et quisquilias fruticum et herbarum in silva humida tropicali.

TYPUS—Brazil, Pará, Belem, 10 VI 1966, *Singer B 4255* (holotype, BAFC; isotype, LIL).

Collybia hirtella (Berk. & Br.) Dennis sensu Dennis (Trans. Brit. Myc. Soc. 34: 444. 1951), from Trinidad is *M. subhirtellus*.

Marasmiellus subinodermatoides Sing., spec. nov.

Pileo in vegetis humidis brunneo (“sayal Br” vel “tortoise shell” M&P), fortiter hygrophano, dehydrato et sicco albo vel albido sed centro frequenter carneobrunneo (“rose amber” M&P), pellucide striato et sulcato per medium radium, macroscopice glabro sed subtomentosulo sub lente in siccis, demum vinaceopunctato in nonnullis, haud viscido, convexo, umbilicato, demum concavo, 12–27 mm lato. **Lamellis** albis, angustis vel mediocriter latis, saepe nonnullis furcatis, in vestustis frequenter sparse intervenosis cum lamellulae venis ad lamellas percurrentes transcurrant, plerumque confertis, rarius mediocriter confertis, ad stipitem attenuatis vel adnatis, demum saepe subcollariatis. **Stipite** albo vel pallido ad apicem, basin versus vinaceo (“copper leaf” vel “cedar

bark” M&P), demum obscuriore (“Maracaibo” M&P), macroscopice glabro sed sub lente fibrilloso-subpubescente, ad basin frequenter tomentosulo, glabrescente, subaequali vel basin versus attenuato, plerumque excentrico, stricto vel curvato, saepe obliquo, 12–21 × 1–2.5 mm. Mycelio basali vix vel moderatim evoluto ex hyphis minutis sub lente visibilibus, albis appressis efformato, ita ut stipes subsinitius dicendus. **Carne** alba, inodora, rarius debiliter formaldehydico odore praesente.

Sporis 8.5–10.5 × 5–6 μm, ellipsoideis, levibus, hyalinis. **Hymenio:** Basidiis 20–28 × 10.5–10.8 μm, tetrasporis. Cystidiis nullis. Cheilocystidis ad aciem heteromorpham lamellarum numerosis, 12–17 × 7–10 μm, ventricosulo-subvesiculosis, setuligeris (typi Rotalis), appendiculis numerosis, raro uno duobusve apicalibus tantum ornatis, tenuitunicatis, hyalinis. **Hyphis** filamentosis vel inflatis vel latis, fibulatis, in pileo haud gelatinosis, hyalinis, in parte inferiore stipitis parallelis, brunneis e pigmento haud incrustante, sed intraparietali. **Epicute pilei** e structura Ramealium consistente, ex elementis versiformibus, diverticulatis, hyalinis vel e pigmento haud incrustante sed intraparietali pallide brunneolis efformata. Tegumento stipitis ex hyphis liberis piliformibus eis Conocybis subsectionis Mixtinorum similibus et ex pilis cystidiformibus exiguis 4–18 × 2.5–4 μm, cylindraceis vel utriformibus, angustis, obtusis, hyalinis efformato. Hyphis liberis 17–40 μm longis et ± 1 μm latis.

Ad truncum emortuum arboris dicotyledoneae in silva tropicali, gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 2 I 1978, *Singer B 10470 b–c* (INPA). Apparently additional collection: Brazil, Bahia, Uruçuca, 8 VI 1978, *Singer B 11155* (INPA).

This species is similar to *M. inodermatoides* Sing. but shows aberrant colors and belongs in subsect. *Gilvini* Sing. *Marasmiellus purpureus* (Berk. & Curt.) Murr. differs in somewhat narrower spores and the colors of the fresh carpophores, as well as the more distant lamellae.

Marasmiellus varzeae Sing., spec. nov.

Pileo albo, glabro, levi vel leniter pellucide striatulo ad marginem, convexo, dein applanato, neque umbilicato nec papillato, 3–9 mm lato. **Lamellis** albis, distantibus, sat angustis vel mediocriter latis, haud intervenosis sed in superficie interla-

mellari rugulosis in adultis, usque ad 11 lamellis percurrentibus (nonnihil minus numerosis in carpophoris minoribus), una vel altera furcata vel omnibus simplicibus, anguste adnexis vel subliberis. **Stipite** albo, dein pallide sordido ad basin et demum ex toto, glabro vel subglabro, levi, curvato, primum centrali sed mox excentrico, $3-5 \times 0.5$ mm. Mycelio basali e fibrillis subtilibus sparsis e basi ipsa radiantibus efformato. **Carne** alba, immutabili, inodora.

Sporis ($6.5-7-9 \times 4.5-5.2$ μm , ellipsoideis, depressione suprahilari destitutis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $20-26 \times 6-8$ μm , tetrasporis; basidiolis paucis tantum fusoides. Cystidiis nullis. Cheilocystidiis numerosis, dimorphis, (1) $14-27 \times 1.5-3.5$ μm , filamentosis, interdum furcatis, vel cylindratis vel anguste ventricosis, interdum constrictionibus instructis, strictis vel flexuosis, ad apicem appendiculo dactylomorpha praeditis, tenuitunicatis, hyalinis; (2) $15-40 \times 3.5-8$ μm , clavatis, ad apicem nonnullis appendiculis setuliformibus usque ad 3.5 μm projicientibus, raro uno apicali vel laterali tantum instructis, sed plerumque typum "Siccus" (Marasmiorum) in mentem revocantibus, tenuitunicatis, hyalinis. **Hyphis** tramatis hymenophoralis regularis et pilei tenuitunicatis, hyalinis, inamyloideis, $2.5-4$ μm latis, interdum leniter inflatis (usque ad 10 μm diam.), radialiter dispositis sed intertextis in pileo, vix gelatinosis et stratum gelatinosum haud efformantibus. Hyphis oleiferis $3-8$ μm diam., opacis, saepe furcatis subhyalinis. **Epicute pilei** ex cellulis terminalibus et subterminalibus repentibus vel ascendentibus vel suberectis et frequenter cystidiformibus sed haud hymeniformiter dispositis efformata; dermatocystidiis $17-40 \times 6-8$ μm ambobus typis cheilocystidiorum simillimis sed saepe ramosis; structura Ramealium hoc modo praesente sed tenui et intermittente. Tegumento stipitis (in parte media) sparso, ad apicem magis evoluto et e dermatocystidiis ambobus typis cheilocystidiorum similibus, basin stipitis versus e hyphis ascendentibus tenuitunicatis hyalinis, integris efformato, his hyphis mycelii basalis similibus.

Ad truncum stantem vivum (Leguminosarum?) in silva tropicali inundabili aquae albae (várzea) gregatim, usque ad 6 m supra terram fructificans.

TYPUS—Brazil, Amazonas, Ilha da Marchantaria, 1 VII 1981, *Singer B 12215* (INPA).

This várzea species is characterized by a mycelium ascending on trees and forming fructifi-

cations just above the water level during or after inundation (cf. Singer, *Amazoniana* 8: 313. 1984). It is related to *M. parlatorei* Sing. and *M. epoch-nous* (Berk. & Curt. in Berk. & Br.) Sing.

Marasmiellus volvatus Sing. ex Sing., spec. nov.

Pileo albo-pallido, hygrophano, siccando albo, fortiter sulcato ad marginem aquoseque virgato in humidis, sub lente sulcis subtiliter ponticulis sericeis velaribus obtectis, ceterum glabro et demum ex toto glabrescente, margine initio subincurvato, demum leniter recurvato, convexo, obtuso, haud umbilicato, $10-23$ mm lato. **Lamellis** albis, distantibus, vel subdistantibus, mediocriter latis, paucis furcatis, aegre intervenosis, anguste adnexis vel liberis. **Stipite** albo, sicco, nudo, aequali sed ad basin bulboso, solido, insitio, $7-15 \times 1-1.5$ mm. Volva angusta, appressa, alba, parti superiori bulbuli affixa. **Carne** alba, immutabili, subinodora.

Sporis (in typo paucis) $10.5-13 \times 3.5-4$ μm , facile collabentibus, hyalinis, levibus, inamyloideis. **Hymenio**: Basidiis $32-37 \times 9-10.5$ μm , clavatis, pariete firma sed haud crassa instructis, tetrasporis; basidiolis haud fusoides. Cystidiis nullis sed sparsis elementis inconspicuis hyphosis, filamentosis in hymenio visis. Cheilocystidiis nullis vel filamentosis, inconspicuis, paucis, sed hyphis ad ipsam marginem pilei projicientibus, sat latiusculis. **Hyphis** fibulatis, inamyloideis. **Epicute pilei** sublaxa sed haud gelatinosa, ex hyphis levibus, omnibus repentibus, hyalinis efformata et ab hypodermio vix differentia, sed trama pilei versus magis filamentosis (superficiem versus usque ad 14 μm inflatis). Strato velari hyphali, hyphis angustis vel satis latis, inamyloideis, levibus.

Ad lignum emortuum arborum dicotyledonearum in silva arenosa tropicali typi campinaranae gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 125, 20 VII 1978, *Singer B 11317* (INPA).

This species is remarkable because of the distinct volva. It is related to *M. helminthocystis* Sing. and *M. coilobasis* (Berk.) Sing. It differs from *M. coilobasis* in scarcely or not intervenose lamellae, smaller spores, and absence of well developed cystidia. If these characters were disregarded because of (assumed) more juvenile states described for *M. volvatus*, it must be recognized that the type of *M.*

coilobasis as well as all the other collections considered identical with it have no trace of a volva (cf. Beih. Nova Hedwigia 44: 30–33. 1973). A description in German (no Latin) was published earlier (Singer, 1988).

Hohenbuehelia amazonica Sing., spec. nov.

Pileo griseo, marginem versus sparse, basin versus dense albo-piloso, levi, haud viscido, forma sua inter *H. petaloidem* et *H. atrocaeruleam* intermedio, ± 6 mm alto et lato. **Lamellis** albis, confertis vel subconfertis, haud confertissimis, subtus stipitem versus abrupto attenuatis, angustis. **Stipite** ad latus sterile haud differentiatio, ad latus fertile albo, levi, concavo, brevissimo, cuneoliformi. **Carne** bubalina vel alba, immutabili, inodora.

Sporis $7-7.5 \times 3-3.3 \mu\text{m}$ (vel forsan majoribus quod paucae visae), ellipsoideo-subcylindraceutis vel oblongo-subcylindraceutis, levibus. **Hymenio**: Basidiis $23.5-32 \times 6.3-6.5 \mu\text{m}$, tetrasporis. Cystidiis metuloideis $40-82 \times 13-15.5 \mu\text{m}$, fusoides, in tertia inferiore plerumque crassioribus et apicem acutum versus gradatim attenuatis, ad apicem sparse granuloso-crystallino-incrustatis, hyalinis vel subhyalinis, pariete $(1.3-)3-5.2 \mu\text{m}$ crassa instructis, numerosis nec densis. Cystidiis haud metuloideis $\pm 20 \times 10.5 \mu\text{m}$, ad aciem et latera lamellarum paucis et sparsis, clavato-ventricosis, apice rotundatis, haud incrustatis, pariete tenui vel firma instructis. Cheilocystidiis $13-16.5 \times 4.3-6 \mu\text{m}$, ad aciem heteromorpham numerosissimis, fusoides et acutis vel interdum mucronatis (mucrone interdum a corpore basali septo separato), hyalinis, haud crasse tunicatis. **Hyphis** pilei tristratosi in tramate fibulatis, strato subhypodermiali gelatinoso ex hyphis laxe dispositis, primum subverticaliter, dein oblique (45°) ascendentibus hyalinis, tenui-filamentosis efformato et $\pm 325 \mu\text{m}$ alto; strato intermedio $\pm 35 \mu\text{m}$ alto, haud gelatinoso, pigmentato pigmento intraparietali et incrustante, sepiaceo-fuliginoso, hyphis haud ascendentibus, tenuibus. Strato inferiore (= trama proprium) $100-115 \mu\text{m}$ alto, hyalino, haud vel vix gelatinoso, ex hyphis magis irregularibus et intertextis efformato. **Epicute** pilei e fasciculis erectis hypharum "pila" pilei formantibus, hyalinis, piliformibus $14-68 \times 3.8-5.2 \mu\text{m}$ efformata, his nunquam crasse tunicatis, obtusis, ex hypodermio natis. Hypodermio $15-30 \mu\text{m}$ alto, cutiformi, haud gelatinoso, ex hyphis pigmentatis $2.2-4.2 \mu\text{m}$ diam. efformato; pigmento ei strati intermedii tramatis identico.

Ad ramulos arborum dicotyledonearum delapsos putrescentes in silva secundaria.

TYPUS—Brazil, Amazonas, Manaus, 27 V 1977, *Singer B 9727* (F).

This new neotropical species appears to belong in the stirps *Atrocaerulea* (with *H. atrocaerulea* (Fr.) Sing., both the large-spored typical forms as well as the form described by Singer & Kuthan in their key, Česká Mykologie 34: 68. 1980; *H. grisea* (Peck) Sing.; *H. portegna* (Speg.) Sing.; *H. phalligera* (Mont.) Sing.) and comes close to *H. atrocaerulea* because of the incrusting pigment in the hypodermium and the intermediate stratum of the pileus trama, but differs in the absence of a tomentose-spongy tegument on the pileus.

Hohenbuehelia campinaranae Sing., spec. nov.

Pileo albo, ad basin et retrorsum plus minusve grisello-fusco, glabro, sed retrorsum (in tertiis duabus vel una a basi) leniter albo-hispido vel subtiliter sericeo-fibrilloso, haud vel lenissime breviter striatulo, convexo dein applanato, sicco concavo, subconchiformi, usque ad 17 mm lato. **Lamellis** cremeo-albis, confertis, angustis, angustato-concurrentibus. **Stipite** vix evoluto, sed pileo breviter horizontaliter protracto et a latere fertili interdum visibili et tunc brevissimo et albido. **Carne** alba, immutabili.

Sporis $7.5-8.5 \times 3-3.5 \mu\text{m}$, cylindraceutis, rarius oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $(15-)17.5-27.5 \times 6-8 \mu\text{m}$, tetrasporis. Cystidiis ad latera lamellarum omnibus metuloideis, nonnullis metuloideis etiam ad acies praesentibus, $47-83 \times 12-18 \mu\text{m}$, pariete $4-6 \mu\text{m}$ crassa instructis, rarissime magis tenuitunicatis, fusoides, acutis, ad apicem granulariter tenuiter incrustatis, hyalinis vel basin carpophori versus dilute fusco-bisis, moderatim numerosis, basi interdum tenuitunicata et bulboso-inflata. Cheilocystidiis $17-26 \times 7.5-13.5 \mu\text{m}$, ventricosis, saepe mucronatis. **Hyphis** fibulatis, inamyloideis. Tramate pilei tri-stratoso, strato superiore subhypodermiali gelatinoso $220-400 \mu\text{m}$ alta, ex hyphis laxis, filamentosis, $1-2 \mu\text{m}$ diam., sub angulo $30-40^\circ$ ascendentibus efformato; strato intermedio absente in parte marginali, alto, ex hyphis hyalinis haud pigmentatis, haud gelatinosis, diametro variabili et \pm refringentibus efformato. **Epicute** pilei cutiformi, hyalina, ex hyphis filamentosis $0.7-2.5$

μm diam. et diverticulatis (diverticulis versiformibus et generatim distantibus vel irregularibus), basin carpophori versus hyphas pilosas paullum differentiatas emittentibus, his $30\text{--}90 \times 2\text{--}3.5 \mu\text{m}$, hyalinis, firme, haud crasse, tunicatis, ad apicem subacutis vel obtusis, filamentosis, numerosis. Hypodermio $15\text{--}20 \mu\text{m}$ alto, ex hyphis filamentosis, levibus, haud gelatinosis, hyalinis vel (praesertim in parte basi approximata) fuscidulo-bisis sed vix incrustatis efformato.

Ad *Chrysobalanacearum* truncos stantes, emortuas in silva arenosa typi campinaranae.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 125, 20 VII 1978, *Singer B 11327* (INPA).

This species is close to *H. paraguayensis* (Speg.) Sing. but has longer spores, larger cheilocystidia, different dermatocystidia, and no endocystidia.

Hohenbuehelia culmicola Sing., spec. nov.

Pileo primum griseo, demum argillaceo (“clay” M&P) ochro-brunneo v. fusco (“centennial Br,” “olive wood” M&P), sordide griseolo-pallido-tomentoso (tomento rudi, spongioso, molli retrorsum, sed gradatim tenuiore marginem subglabrum versus), levi, ad marginem haud manifeste pellucide striatulo, chonchiformi, in siccis $2\text{--}20 \text{ mm}$ lato. **Lamellis** confertis, non confertissimis, nec subconfertis, angustis, marginem versus moderatim latis, acie integris, haud intervenosis, cremeis siccando cremeo-flavis, decurrentibus usque ad zonam glabram, levem, basalem. **Stipite** vero nullo. **Carne** tenui.

Sporis $(6\text{--})7\text{--}9 \times (3\text{--})4\text{--}4.8 \mu\text{m}$, ellipsoideis, raro oblongis frontaliter visis et leniter allantoideis lateraliter, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $15\text{--}25 \times (5\text{--})6\text{--}8 \mu\text{m}$. Metuloideis $35\text{--}80 \times 9.5\text{--}24.5 \mu\text{m}$, fusoides, acutis, crystallino-incrustatis ad apicem, pariete $3.5\text{--}8 \mu\text{m}$ crassa, lutea vel mellea instructis, in juvenilibus tantum parietibus tenuioribus, numerosis. Cheilocystidiis $16\text{--}20 \times 2\text{--}4.5 \mu\text{m}$, raro majoribus (transitionibus metuloideis versus), numerosis, ventricosis, plerumque apice effilatis ($0.5 \mu\text{m}$ diam.) et capitatis (capitulo inconstante, $2\text{--}4 \mu\text{m}$ diam.). **Hyphis** fibulatis, inamyloideis. Strato subhypodermiali, gelatinoso $230\text{--}240 \mu\text{m}$ alto, ex hyphis laxae et subparallele dispositis, $0.5\text{--}2 \mu\text{m}$ diam., ascendentibus ($\pm 30^\circ$) efformato; strato intermedio supra stratum

inferius (tramate pilei proprio) $10\text{--}65 \mu\text{m}$ alto, ex hyphis parallelis vel subparallelis, haud gelatinosis, tenuiter vel firme tunicatis, pallide fuscidulis vel melleo-hyalinis (KOH) efformato; strato inferiore $210\text{--}260 \mu\text{m}$ alta, haud pigmentato, haud gelatinoso ex hyphis firme vel leniter crassiuscule tunicatis, subparallelis, radialiter dispositis efformato. **Epicute pilei** ex hyphis agglutinatis $3\text{--}3.7 \mu\text{m}$ latis, hyalinis, erectis efformata; inter eas dermatocystidiis cheilocystidiis similibus, $18\text{--}20 \times 2\text{--}4.5 \mu\text{m}$, hyalinis, anguste ampullaceis, saepe capitatis praesentibus. Hypodermio cutiformi sed ex hyphis intertextis, haud gelatinosis, melleis vel griseolis (KOH) efformato, pigmento granulariter incrustante. Endocystidiis nullis.

Ad culmos *Chusqueae* emortuos in silva tropicali vel subtropicali elevata, gregatim.

TYPUS—Colombia, Salto de Tequendama, 25 VII 1960, *Singer B 3503d* (BAFC). Additional collection: Argentina, Tucumán, Yerba Buena in subtropical basal forest, 4 XI 1950, *Singer T 1006* (LIL).

Hohenbuehelia delasotae Sing., spec. nov.

Pileo pallide griseolo-alutaceo vel cremeo, pallidiore ad marginem, glabro vel subglabro, conchiformi et spatulato, $18\text{--}37 \text{ mm}$ longo, nonnihil minus lato. **Lamellis** alutaceo-pallidis vel dilute cremeis, confertissimis, angustis, ad stipitem decurrentibus. **Stipite** e latere sterili a pilei superficie haud discernibili sed ruditer tomentoso, ad latus lamellarum albido, levi, subglabro, usque ad $5 \times 2 \text{ mm}$. **Carne** albida, siccando fragilissima, inodora.

Sporis $5\text{--}6.7 \times 3\text{--}4.5 \mu\text{m}$, versiformibus, plerumque ellipsoideis, hyalinis vel intus in ammoniaco subflavidulis, levibus, inamyloideis. **Hymenio:** Basidiis $\pm 22 \times 5.8 \mu\text{m}$, tetrasporis. Metuloideis $36\text{--}73 \times 10\text{--}21 \mu\text{m}$, paucis (prope acies lamellarum) $20 \times 5 \mu\text{m}$, plerumque fusoides, acutis, crystalline incrustatis (interdum tenuiter), pariete crassa ($2.5\text{--}5 \mu\text{m}$), straminea, mellea, melleo-pallida, numerosis vel moderatim numerosis. Cheilocystidiis lecythiformibus, tenuitunicatis, numerosis, e. gr. $25 \times 4.5 \mu\text{m}$, sub capitulo $\pm 1 \mu\text{m}$ diam., capitulo $\pm 3 \mu\text{m}$ diam. **Hyphis** fibulatis, inamyloideis. Strato subhypodermiali gelatinoso hyalino, $20\text{--}30 \mu\text{m}$ alto tantum, ex hyphis hyalinis, horizontalibus vel leniter ascendentibus efformato. Tramate pilei proprio $100\text{--}150 \mu\text{m}$ alto, ex

hyphis filamentosis, radiatim dispositis, vix vel paullum pigmentatis, haud gelatinosis efformato. **Epicute pilei** ad marginem pilei vix evoluta. Hypodermio cutiformi, haud gelatinoso, $\pm 15 \mu\text{m}$ alto, nonnihil pigmentato sed pigmento haud incrustante.

Ad lignum emortuum arborum dicotyledonearum in silvis subtropicali-montanis et tropicali-montanis.

TYPUS—Argentina, Tucumán, Quebrada de los Sosas, 18 XII 1948, *Singer & Digilio T16* (LIL, as *H. angustata* (Berk.) Sing., cf. Singer & Digilio, Lilloa 25: 110. 1953). Additional collection: Bolivia, La Paz, Nor-Yungas, Charobamba, 30 I 1956, leg. *Singer & E. R. de la Sota, Singer B 701* (F).

This species, formerly erroneously united with *H. angustata*, has larger spores than the latter, but smaller spores than *H.izonetae* Sing. The latter and *H. abietina* Sing. & Kuthan are related, but differ in the depth of the gelatinized zone (shallower in *H. delasotae*), and somewhat less crowded lamellae. The habitat (in tropical-montane forest on dicotyledonous wood) is also different from that of *H.izonetae* and *H. abietina*.

Hohenbuehelia espeletiae Sing., spec. nov.

Pileo olivaceofusco, demum pallide flavobrunneo, pilis hyalinis hirsuto, minus dense piloso marginem versus, margine initio involuto, \pm viscido, conico-convexo, circumferentia \pm reniformi, demum retrorsum concavo, 15–40 mm lato. **Lamellis** griseolo-albidis (YR 8/3, Mu), demum forsitan leniter flavescens, confertis, decurrentibus. **Stipite** nullo vel subnullo. **Carne** haud alba, odore saporeque subinamoenis.

Sporis (5.5–)6–8 \times 3.5–4.3(–5) μm , ellipsoideis, nonnullis subreniformibus lateraliter visis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 22.5–27.5 \times 4.8–6 μm , tetrasporis. Metuloideis 50–86 \times 10–21 μm , numerosissimis ad aciem lateraque lamellarum, fusioideis, acutis, fortiter crystallis hyalinis in tertia superiore incrustatis et mucronatis, pariete subhyalina vel mellea, \pm stratosae, crassa (1.5–7.5 μm diam.) instructis. Cheilocystidiis 17–29 \times 4–8 μm , fusiformibus vel ampullaceis vel lecythiformibus, capitulo 1.5–2 μm diam., fibula basali et incrustatione resinacea tenui gaudente. **Hyphis** fibulatis, inamyloideis. Strato subhypodermiali gelatinoso 150–500, plerumque $\pm 300 \mu\text{m}$ alta, ex hyphis moderatim vel fortiter

gelatinosis et leniter ascendentibus vel subhorizontalibus, filamentosis efformato; strato intermedio nullo; strato inferiore (tramate pilei proprio) subhyalino vel hyphis fuscidulis intermixtis, haud gelatinoso vel vix gelatinascente, 200–500 μm alto, in zona supralamellari ex hyphis hyalinis magis parallelis, radialiter dispositis efformata. **Epicute pilei** ex hyphis intertextis recurvato-reflexis vel erectis, fasciculatis, hyalinis, 150 \times 2.5–3 μm , haud gelatinosis pilorum efformata; dermatocystidiis nullis. Hypodermio tenui, pigmentato (fuscidulo) sed haud incrustato, demum obsoleto vel gelatinascente.

Ad *Espeletiam hartwegianam* Sch. Bip. ex Wedd. (var. *centroandinam*, etiam *Festuca, Calamagrostis* adsunt) in zona alpina (Páramo) gregatim.

TYPUS—Colombia, Tolima, Mun. Santa Isabel, Valle Río Totarito, margen izquierda de la Quebrada Africa, alt. 3900 m, 6 II 1980, *Boekhout 589* (MEDEL). Additional collection: Ibid., *Boekhout 593a* (F), apparently an old stage of the same species, but here the lamellae described as yellowish (10 YR 3/4, Mu).

The host and habitat in general are characteristic of this species. Otherwise it may be identical with *H. barbatula* (Berk. & Curt.) Dennis but hardly with the type or with Pegler's interpretation of the type (Kew Bull., Add ser. IX: 234. 1983) which has much more elongated spores. *Resupinatus subbarbatulus* Murr. and *Pleurotus barbatulus* (Berk. & Curt.) Sacc. have distant or "rather distant" white lamellae and differ in habitat.

Hohenbuehelia hydrogeton Sing., spec. nov.

Pileo sordide brunneo margine cremeo-albido, rarius concolori, levi, rarius ad marginem sulcato, macroscopice subglabro vel subtiliter velutino, sub lente vellere, praesertim retrorsum, viscido, conchato sed retrorsum stipitiformiter extenso, sed haud vere stipitato, 7–32 mm lato. **Lamellis** albidis dein pallide cremeis, confertis, interdum subconfertis, angustis, decurrentibus. **Stipite** nullo vel subnullo. **Carne** inodora.

Sporis (5.5–)6–9 \times 2.5–5 μm , plerumque 6.5 \times 3.5 μm (in typo paucis), ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 16–23 \times 4–6.5 μm , tetrasporis. Metuloideis (17–)30–85 \times (6.5–)7.5–14.5 μm , fusioideis, apice acutis, pariete primum melleo-subhyalina et tenuiter crystalline incrustata, dein crassa (1.5–5.5 μm), magis man-

ifeste granuloso-muricata ad apicem, mellea instructis, apicem et basin versus tenuitunicatis. Cheilocystidiis $10-23 \times 3-7.5 \mu\text{m}$, plerumque fusoides, uno vel duobus appendiculis tenuibus apicalibus ornatis, tenuitunicatis, appendiculis $4-5 \mu\text{m}$ projicientibus, ad apices suos incrustatione resinosa globosa frequenter capitatis. **Hyphis** fibulatis, inamyloideis. Strato subhypodermiali, gelatinoso $30-60 \mu\text{m}$ alto (altiore in medio, minus alto ad marginem pilei), hyalino, ex hyphis filamentosis, horizontalibus vel leniter ascendentibus efformato; strato intermedio nullo; strato inferiore (trama pilei proprium) $40-80 \mu\text{m}$ alto, numquam minus alto quam stratum gelatinosum, hyalino, rarius subhyalino; pigmento vix visibili, haud incrustante. **Epicute pilei** ex hyphis $25-100 \times 3-5 \mu\text{m}$, pila pilei formantibus efformata, hyphis \pm erectis, plerumque ad apicem attenuatis, obtusis, tenuiter ($0.3 \mu\text{m}$) hyalino-vel subhyalino-tunicatis, confertissime aggregatis, ex hypodermio natis. Hypodermio pertenui, subhyalino vel pallidissime fuscidulo sed pigmento haud incrustato.

Ad arbores dicotyledoneas in silva inundabili aquae albae (várzea), gregatim.

TYPUS—Brazil, Amazonas, Ilha Marchantaria, I VII 1981, *Singer B 12213* (F).

A further collection (*Singer B 11467*) is intermediate between this and the following species since it shows a deeper gelatinous zone and grows in igapó vegetation. This may be a variety of either species or a closely related species.

Hohenbuehelia izonetae Sing., spec. nov.

Pileo brunneolo vel brunneolo-pallido, pallidior ad marginem, in maturis pellucide striato, macroscopice glabro, sub lente subtiliter pubescente vel pruinato, neque viscido neque hygrophano sed vetustis siccando pallidioribus, convexo, dein irregulariter applanato vel demum concavo, $16-41 \text{ mm}$ lato. **Lamellis** albidis, demum alutaceo-pallidis, confertis, rarius subconfertis, angustis, decurrentibus. **Stipite** albo vel albido, ascendente, minuto, de latere sterili haud discernibili, sed bene diffentiato sub lamellis. **Carne** alba vel albida, immutabili, inodora.

Sporis $6-8.3(-9) \times 3-5.5 \mu\text{m}$, plerumque $\pm 7-8 \mu\text{m}$ longis, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $25-28 \times 7-8 \mu\text{m}$, rarius usque ad $33 \mu\text{m}$ longis, tetrasporis. Metuloideis primum tenui- et hyalino-tunicatis, mox

crasse tunicatis in parte media et superiore ($1-3.5 \mu\text{m}$ diam.), $35-73 \times 11-18 \mu\text{m}$, fusoides aut subampullaceis, his obtusis rarisque, illis subacutis vel subobtusatis et frequentibus, haud muricatis crystallis notabilibus. Cheilocystidiis $21-27 \times 4.5-7.5 \mu\text{m}$, anguste ventricosis, tenuiter vel firme nec crasse tunicatis, frequenter mucronatis et resinaceo-incrustatis ad apicem, rarius apice rotundatis et haud incrustatis. **Hyphis** plerumque tenuitunicatis, fibulatis, intertextis, frequenter dilatatis, sed in hymenopodio subparallelis et tenuioribus, inamyloideis; strato superiore subhypodermiali gelatinoso $20-40 \mu\text{m}$ alto, hyalino, ex hyphis horizontalibus, $1.8-3.5 \mu\text{m}$ latis efformato. Strato intermedio nullo. Strato inferiore (trama proprium) altiore quam stratum gelatinosum, hyalinum, ex hyphis latioribus (quam in strato gelatinoso) efformato. **Epicute pilei** e dermatocystidiis triformibus efformata: (1) dermatometuloideis, e. gr. $23 \times 15 \mu\text{m}$, crasse ($1.5-2 \mu\text{m}$) tunicatis, sparsis; (2) dermatocystidiis haud metuloideis, cylindraceis vel clavatis, $15-35 \times 4-6 \mu\text{m}$, tenuitunicatis, hyalinis; (3) dermatocystidiis haud metuloideis, ampullaceis, apice $3-4.3 \mu\text{m}$ diam., saepe profunde insertis in hypodermio. Hypodermio cutiformi, haud gelatinoso, ex hyphis $\pm 2 \mu\text{m}$ diam. in parte superficiali, $3-10 \mu\text{m}$ diam. in parte inferiore efformato, $20-35 \mu\text{m}$ alto.

Ad lignum dicotyledoneum in silva inundabili aquae nigrae (igapó), gregatim.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 13 III 1983, *Singer B 12424* (F).

This species can be distinguished from related forms by a thin ($20-40 \mu\text{m}$ deep) gelatinous zone, trimorphic dermatocystidia, and the habitat. The following descriptive data refer to the nematophagous asexual state of *Hohenbuehelia izonetae*: Forma imperfecta a cl. G. Thorn e collectione typo isolata secundum Thorn (in litt.) ad *Nematoctonus pachysporum* (*Nematoctonus pachysporus* Drechsler, Wash. Acad. Sci. 33: 185. 1943) pertinet. Gratiam habeo cl. Thorn qui descriptionem formae anamorphae *Hohenbueheliae izonetae* sequentem amabiliter communicavit: Hyphis assimilatavis $1.5-3.5 \mu\text{m}$ diam., hyalinis, defibulatis; hyphis fertilibus ($1-1.5-2.5(-3) \mu\text{m}$, diam., hyalinis, defibulatis. Nodis adhaesivis praedatorii nullis. Epigris(pegs) conidiogenis simplicibus, truncato-conicis, $1-3 \times 1.5-2$ (ad apicem $0.6-1) \mu\text{m}$. Aleuriosporis pallide flavidis, subtiliter vel ruditer verrucosis, ovoideis vel subglobosis, ($8.5-10-13 \times (5.5-6-8) \mu\text{m}$. Conidiis hyalinis,

fusiformibus, levibus (13–)14–17.5(–19) × (3–)3.2–4.8(–5.2) μm , germinatione tubum germinativum attenuatum, cellula clepsydromorpha apici superimposita instructis, hac 3.5–4.5 × (1.2–)1.5–1.8 μm , demum circumdata guttula mucoidea, tubo germinativo frequenter sympodialiter continuato, unum vel duo nodos additionales formante. Cultura: *Gregg Thorn T-74* (OAC).

Nematoctonus pachysporus T-74 is considered a sectoring of the original culture and not different from the type of the form species *Nematoctonus pachysporus* Drechsler from which it differs only in the absence of clamp connections. The species of *Nematoctonus* are all nematode capturing and digesting fungi, including our form pertaining to *H. izonetae*. This as well as other *Nematoctoni* are apparently cumulative form species whereby one anamorph binomial may correspond to several species of *Hohenbuehelia* or where in aberrant ecological conditions the teleomorph may not be produced.

***Hohenbuehelia microspora* (Speg.) Sing., comb. nov.**

BASIONYM—*Pleurotus portegnus* var. *microsporus* Speg., *An. Mus. Nac. B. A.* 8 (ser. 3, v. 1): 50. 1932.

Differs from *H. portegna* (Speg.) Sing. in smaller spores (6.5–8.2 × 3.7–4.5 μm), from *H. grisea* (Peck) Sing. in less deep infrahypodermial gelatinous zone (200–250 μm deep); and from both in hosts and area of distribution. *H. atrocaerulea*, a European species, differs in the hairs of the pileus and the intermediate stratum of the pileus trama being pigmented intraparietally but never showing any dark incrustation, also in slightly larger spores, deeper hypodermium, and habitat.

***Hohenbuehelia spathulata* (Pers. ex Purton) Sing., comb. nov.**

BASIONYM—*Agaricus spathulatus* Pers., *Syn.* p. 479. 1801 ex (Purton, *App. Midl. Fl.* p. 430. 1821).

It differs from *H. geogenia* (D.C. ex Fr.) Sing. in less deep gelatinous zone (70–140 μm), somewhat shorter spores (5.5–6.5 × 3–4.5 μm), the macroscopically thinly white tomentose, not glabrous pileus. *H. petaloides* (Bull. ex Fr.) Schulz. has, as *H. spathulata*, endocystidia, but is ligni-

colous and has a gelatinous zone 40–75 μm deep and broader cheilocystidia. *Agaricus anomalus* Pers. (*Obs. Myc.* 1: 55, pl. 4, fig. 1–2. 1796) may belong here, but Fries accepts the epithet *spathulatus* as variety in 1821 and describes a different species (a *Cortinarius*) under *Agaricus anomalus*.

***Hohenbuehelia tenuissima* (Schwein.) Sing., comb. nov.**

BASIONYM—*Agaricus tenuissimus* Schwein., *Acta Soc. Nat. Scrut. Lips.* 1: 90. 1822 non Jungh. (Pilát erronee scripsit “tenerrimus”).

It differs from *H. angustata* (Berk.) Sing. in less deep (10–50 μm) gelatinous zone and always very diluted pigments in the cuticle. It sometimes shows nonpetaloid habit and can then be recognized by the small spores and the shallow gelatinous zone.

***Hohenbuehelia tropicalis* Sing., spec. nov.**

Pileo pallide alutaceo, macroscopice glabro, sub lente nonnihil pruinato, convexo, circumferentia subcirculari sed retrorsum stipitiformiter extenuato, haud striato, 7–38 mm lato. **Lamellis** subconcoloribus, confertis vel confertissimis, angustissimis, decurrentibus. **Stipite** vero nullo sed e latere fertili sub lamellis zona levi, parva visibili, e latere sterili haud differentiata. **Carne** vitrea, subconcolori vel subhyalina, odore haud notabili.

Sporis 8–9.5 × 3–5.5 μm , ellipsoideis, subtus acuminatis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 26 × 6–6.5 μm , tetrasporis. Metuloideis moderatim numerosis, magnis, (36–)47–105 × (12–)16–33 μm , quantum propinquius aciei lamellarum, tantum minoribus, fusioideis apice acutis vel subacutis, pariete sursum incrassata (ita ut apex plerumque solidus evadit), basin versus attenuata, mellea, ad apicem tenuiter crystalline incrustata instructis. Cheilocystidiis ventricosis, 14–18.5 × 4–11 μm , ad apicem rotundato-obtusis, rarius quodammodo appendiculatis, sed appendiculis numquam duobus vel compluribus, pariete tenui, hyalina instructis. **Hyphis** fibulatis, inamyloideis. Strato supero subhypodermiali pilei gelatinoso, 100–130 μm alto, ex hyphis moderatim tantum gelatinisatis, et nonnullis non gelatinisatis, omnibus horizontalibus et hyalinis efformato; strato intermedio pigmentato, haud gelatinoso, ± 40–70 μm alto, pigmento haud incrustante; strato inferiore e zona supralamellari tantum ef-

formato, a strato intermedio gradatim neque abrupte delimitato, ex hyphis subparallelis hyalinis efformato et pro ratione haud alto. **Epicute pilei** e pilis partim densis, hyalinis, $\pm 40 \times 6 \mu\text{m}$, ex hypodermio natis efformata. Hypodermio in zona superiore hyalino vel melleo-hyalino, in zona inferiore dilute melleo, ex hyphis haud gelatinosis, pigmento haud incrustatis efformato, $20\text{--}30 \mu\text{m}$ alto.

Ad lignum emortuum dicotyledoneum in silva typi terrae firmae.

TYPUS—Brazil, 30 km N of Manaus ("EM-BRAPA"), 3 IV 1978, *Singer B 10897* (INPA).

In this species, the edge of the lamellae is heteromorphous whereas in the closely related *H. campinaranae* Sing., the edge is subheteromorphous; also in the latter the spores are less elongated and the habitat is different. *Hohenbuehelia hydrogeton* Sing. has smaller spores and less than $90 \mu\text{m}$ deep gelatinous zone.

Stigmatolemma hyalinum Sing., spec. nov.

Pileo cupuliformi, vitreo-hyalino, levi, glabro, convexo, sessili, subcentraliter affixo, $0.5\text{--}1 \text{mm}$ lato. **Lamellis** nullis, superficie hymeniali levi, alba, concava. **Stipite** nullo. **Carne** tenui, vitreo-hyalina.

Sporis $6\text{--}6.5 \times 3.3\text{--}4 \mu\text{m}$, ellipsoideis, levibus hyalinis. **Hymenio**: Basidiis $18\text{--}24.5 \times 6\text{--}6.5 \mu\text{m}$, tetrasporis; basidiolis haud fusoides. Cystidiis nullis. **Hyphis** tramatis laxe dispositis, gelatinosis, tenuifilamentosis, tenuitunicatis, hyalinis, fibulatis, $1\text{--}2 \mu\text{m}$ diam., effilato-liberis ad marginem cupulae. Subhymenio minus vel haud gelatinoso, ex elementis nonnihil elongatis, $\pm 3 \mu\text{m}$ latis, hyalinis, subintertextis efformato. **Epicute** paullum evoluta.

Ad corticem arborum dicotyledonearum gregatim sed haud poriformiter aggregate crescens.

TYPUS—Brazil, 30 km N of Manaus, 30 I 1978, *Singer B 10565* (INPA).

Oudemansiella glutinosa Sing., spec. nov.

Pileo umbrino, per medium radium sulcato, glabro, sub pluviis glutinoso, convexo, centro depresso, papilla exigua in depressione \pm evoluta centrali ornato, $\pm 16 \text{mm}$ lato. **Lamellis** albis, sed

ad aciem aurantio-ochraceis, subdistantibus, ventricosis, anguste adnexis. **Stipite** albo, macroscopice glabro vel subglabro, viscido, cavo, aequali, $\pm 60 \times 1 \text{mm}$. **Carne** alba vel fuscidula, inodora.

Sporis (ornamentatione inclusa) $14\text{--}16.5 \times 12\text{--}14 \mu\text{m}$, subglobosis, echinatis, hyalinis, pariete crassiuscula et spinis $2\text{--}3 \mu\text{m}$ longis praeditis, inamyloideis. **Hymenio**: Basidiis $40\text{--}52 \times 17\text{--}18 \mu\text{m}$, (2-)4-sporis. Cystidiis $50\text{--}90 \times 30\text{--}37 \mu\text{m}$, ventricosis, apice angustatis sed late rotundatis, hyalinis. Cheilocystidiis $36\text{--}80 \times 10\text{--}18 \mu\text{m}$, clavatis, interdum centro constrictis vel apicem versus constrictis, et tunc subutriformibus, rarius ventricosis, plerumque brunneo-fulvo-incrustatis incrustatione rudi. **Hyphis** fibulatis; tramate pilei subtus fuscidulo-sepiaceo, in strato subhypodermiali gelatinoso $30\text{--}55 \mu\text{m}$ alto, ex hyphis anguste filamentosis efformato, hyalino, inamyloideo. **Epicute pilei** tenui, subhymeniformi, ex elementis erectis vel prostratis clavatis, cheilocystidiis similibus sed omnibus hyalinis e tramate vel hypodermio tenuissimo, cutiformi, subhyalino, intermittente natis, $18\text{--}45 \times 5\text{--}12 \mu\text{m}$ efformata. Tegumento stipitis ex hyphis subparallelis vel parallelis corticis natis, supra corticem stratum gelatinosum plerumque verticalium hypharum formantibus et cellulis terminalibus interdum cystidiformibus, his dermatocystidiis eis pilei similibus sed magis versiformibus et sparsis aut fasciculatim conglobatis, hyalinis.

Ad terram in silva primaria litoral tropicali.

TYPUS—Colombia, Valle, Buenaventura, San Joaquin, 22 IV 1968, *Singer B 6287* (F).

This species can easily be separated from other echinosporous species of subg. *Oudemansiella* because of the gelatinized zones of both pileus and stipe.

Oudemansiella linicolor Grinling ex Sing., spec. nov.

Pileo caeruleo (489/479 Séguy), pallescente usque ad Séguy 480, glabro, haud vel vix glutinoso, pellucide striato, pellicula haud vel vix separabili, convexo dein applanato vel depresso, usque ad 90mm lato. **Lamellis** albis, distantibus ($16\text{--}18$ lamellis percurrentibus), usque ad 11mm latis, acie undulata sed haud serrulata praeditis, adnatis, frequenter dente decurrente. **Stipite** albo, basin versus leniter brunnescente, fibrilluloso-sericeo, so-

lido, frequenter excentrico, 35–42 × 4–5 mm, et aequali, sed frequenter basin interdum subincrasatam versus attenuato (et tunc basi ± 3 mm lata), plerumque curvato. **Carne** alba, in stipite fibroso-tenaci sed in pileo succosa, sapore haud notabili; odore subphenolico.

Sporis 19–22 × 17–20 μm, subglobosis, pariete crassiuscula instructis, levibus, sed intus granulosis, hyalinis, inamyloideis, in massa supra lamellas albis. **Hymenio**: Basidiis 36–60 × 13–15 μm, tetrasporis. Cystidiis e. gr. 95 × 15 μm, cylindraco-subutritiformibus, hyalinis, crassiuscule tunicatis. Cheilocystidiis usque ad 195 × 25 μm, subfusiformi-subampullaceis, hyalinis, tenuitunicatis. **Hyphis** fibulatis, inamyloideis. **Epicute** subhymeniformi, ex elementis obpiriformibus, obtusis vel clavatis pigmento vacuolari repletis et dermatocystidiis usque ad 150 μm longis cystidiis vel cheilocystidiis hymenialibus similibus efformata.

Ad ligna in silva tropicali.

TYPUS—Republique du Congo, (Brazzaville), Forêt de Mandiélé, Plateau de Bateké, leg. *Corl. Bouquet 1968, Grinling 71201* (F).

The color of flax (*Linum usitatissimum* Linn.) flowers differentiates this species from all others of subg. *Oudemansiella* where it appears to be close to *O. canarii* (Jungb.) Höhnelt.

Oudemansiella subnigra Sing., spec. nov.

Pileo nigro vel subnigro, velutino, sicco, levi, campanulato-convexo, obtuso, 27–28 mm lato. **Lamellis** albidis acie subnigris, siccis flavidis et sub lente fulvo-maculatis, confertis, sat latis, adnatis. **Stipite** griseo (7 A 9 vel “log cabin” M&P), subtiliter albo-piloso, manifeste piloso sub lente, e basi apicem versus leniter attenuato et subtus in pseudorhizam acutam producto, 50–55 × 6.5 mm, ad apicem ± 3 mm diam. Pseudorhiza alba, brevi. **Carne** alba, inodora.

Sporis 10.5–12 × 6.8–8.5 μm, ellipsoideis, levibus, inamyloideis, hyalinis in ammoniaci. **Hymenio**: Basidiis 31–50 × 12.5–17 μm, tetrasporis. Cystidiis 65–120 × 16–33 μm, ventricosis vel ampullaceis vel ventricososubcapitatis (et tunc cystidia *Gloiocephalarum* in mentem revocantibus), totis hyalinis et tenuiter vel firme tunicatis, sed incrustatione resinacea, hyalina et insuper fulva, hac facile dissolubili, obtectis. Cheilocystidiis 40–

51 × 8–16 μm, clavatis, rarius fusioideo-ventricosis, pigmento vacuolari pallide fulvo vel fusco repletis, apice rotundato-obtusis, pariete et contentu hyalinis. **Hyphis** haud gelatinosis, fibulatis, inamyloideis. Tramate hymenophorali regulari. **Epicute pilei** hymeniformi, ex elementis 44–48 × 12–16 μm pigmento vacuolari fusco repletis et dermatocystidiis 70–75 × 25–35 μm, conspicuis, late fusioideis et apice anguste sed subobtusis vel obtuse mucronatis, in parte inferiore vel ex integro pigmento vacuolari fusco efformata. Hypodermio cutiformi, hyphis in parte superiore hypodermii pigmento vacuolari fuscido repletis, in parte inferiore hyalinis vel subhyalinis. Tegumento stipitis e dermatocystidiis e. gr. 60 × 10 μm, tenuitunicatis, hyalinis vel fusco-pigmentatis, ventricosis, rarius fusioideis et obtusis.

Ad terram, possibiliter in ligno immerso radicans, in silva typi terrae firmae flumini proxima.

TYPUS—Brazil, Amazonas, Ponta Negra, 18 XII 1977, *Singer B 10350* (INPA).

Oudemansiella nigra Dörfelt is similar in colors but smaller, with close lamellae and longer cystidia.

Mycenella polylepdis Sing., spec. nov.

Pileo griseo, glabro, sulcato, convexo, subumbonato vel umbone umbilicato praedito, ± 9 mm lato. **Lamellis** albis, subdistantibus, haud ventricosis, primum subascendentibus, dein magis horizontalibus, haud ventricosis, adnatis. **Stipite** apicem versus pallido, basin versus griseo, pruinoso, apice excepto glabrescente, aequali, ± 40 × 1 mm. **Carne** tenui, inodora.

Sporis 6.5–7(–8) × 5–6.2(–6.5) μm, maturis (cum tota pariete) 3–6-exrescentiis breviter dactylo-morphis vel veruciformibus ornatis, his 1–2 μm projicientibus et obtusis, totis inamyloideis, tenuitunicatis. **Hymenio**: Basidiis 19–21 × 6 μm, bisporis. Cystidiis numerosissimis, 31–68 × 8–14 μm, metuloideis, crassitunicatis, praesertim in parte ventricosa, pariete 1–3 μm crassa, haud incrustata, inamyloideis, ammoniaci ope hyalinis, fusioideo-ampullaceis, ad apicem longe attenuatis et 1–2.7 μm crassis, apice subacutis vel subobtusis. **Hyphis** filamentosis, nonnullis inflatis, sed haud Mycenae modo, haud gelatinosis, fibulatis, sed nonnullis septis simplicibus notatis, hyalinis, tenuitunicatis, in stipite parallelis, inamyloideis. Tramate hy-

menophorali regulari et hyphis intertextis efformato. **Epicute pilei** cutiformi, hyphis diverticulatis hyalinis; dermatocystidiis inconspicuis, e. gr. $12 \times 7.5 \mu\text{m}$, etiam diverticulatis, diverticulis sat densis, usque ad $6 \mu\text{m}$ projicientibus; dermatocystidiis metuloideis nullis. Tegumento stipitis e dermatocystidiis cystidiis hymenialibus simillimis hyalinis, sed pariete usque ad $1 \mu\text{m}$ crassa gaudentibus, haud incrustatis, $35\text{--}60 \times 4\text{--}12 \mu\text{m}$ efformato.

Ad humum lignosum in silva Polylepidum (*P. australis* Bitter) inter muscos.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 16 II 1966, *Singer T 5203* (BAFC).

Marasmius*

Sect. Marasmius

Marasmius albidomurinus Sing., spec. nov.

Pileo albido-murino, in vegetis junioribus subalbido, in vegetis et siccis centro atrobrunneo vel fuligineo maculato, ceterum siccando argillaceo-subereo, sulcato, convexo, centro depresso vel umbilicato, haud papillato, $1.5\text{--}2 \text{ mm}$ lato. **Lamellis** albis acie et collario albo, sat latis, $9\text{--}12$ lamellis percurrentibus, lamellis nullis. **Stipite** subnigro apice primum albo vel pallido, glabro, insitio, $6 \times 0.2 \text{ mm}$.

Sporis $(4.5\text{--})5.5\text{--}6.2 \times 2.3\text{--}2.5 \mu\text{m}$, plerumque $6 \times 2.5 \mu\text{m}$, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $13 \times 4 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis elementis epicutis simillimis. **Hyphis** fibulatis, in pileo inamyloideis vel vix pseudoamyloideis. **Epicute pilei** hymeniformi, elementis $15\text{--}31 \times 6\text{--}16 \mu\text{m}$, setulis $0.5\text{--}2.5 \times 0.5\text{--}1 \mu\text{m}$, divergentibus typi *Rotalis* obsitis, ex toto hyalinis.

Ad folia dicotyledonea delapsa in silva typi terrae firmae tropicali, pluviali.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 20 II 1978, *Singer B 10670* (INPA). In "igapó" occurs a similar form with ellipsoid spores; Igarapé do Tarumãzinho, 14 V 1980, *Singer B 12166* (INPA).

* The species of each section are enumerated separately.

Marasmius bathomphalus Sing., spec. nov.

Pileo dilute sordideque cinnamomeo vel rubido-brunneo, sicco subferrugineo-cinnamomeo vel cinnamomeo, macula nigra minuta zona alba vel pallida circumdata in umbilico ornato, glabro, sulcato, semigloboso-convexo, umbilico centrali profundo et angusto praedito, $\pm 2 \text{ mm}$ lato. **Lamellis** albis acie alba et collario albo, siccando plus minusve sordidescentibus, distantibus ($8\text{--}9$ lamellis percurrentibus), latis. **Stipite** subnigro, glabro, insitio, $10\text{--}14 \times 0.1 \text{ mm}$.

Sporis $8\text{--}12 \times 3.5\text{--}4.5 \mu\text{m}$, plerumque $8.5\text{--}10.5 \times 3.7\text{--}4 \mu\text{m}$, fusioideis, ad apicem obtusis, hyalinis, inamyloideis. **Hymenio**: Basidiis $15 \times 5.5 \mu\text{m}$, tetrasporis; basidiolis fusioideis. Cystidiis nullis. Cheilocystidiis cellulis epicutis simillimis. **Hyphis** intertextis in pileo, nonnullis inamyloideis, aliis leniter pseudoamyloideis, in apice stipitis \pm parallelis et magis manifeste pseudoamyloideis, fibulatis. **Epicute pilei** subhymeniformi, ex elementis ex integro setulis $0.5\text{--}2.7 \times 0.5\text{--}1.3 \mu\text{m}$ obtectis typi *Rotalis*, $25\text{--}35\text{--}55 \times 10\text{--}29\text{--}(42) \mu\text{m}$, hyphis elongatis nonnullis etiam setuligeris intermixtis, pariete $0.2\text{--}1 \mu\text{m}$ crassa, subhyalina, inamyloidea, setulis ochraceobrunneis (KOH).

Ad folia dicotyledonea delapsa in silva typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, ("EMBRAPA"), 9 II 1978, *Singer B 10646* (INPA).

Marasmius brachysporus Sing., spec. nov.

Pileo primum albo, zona grisea circum maculam centalem atrogriiseum vel fuligineam manifesta, dein albido-pallido circum umbonem griiseum semiglobatum, siccando frequenter argillaceo ex toto, sulcato, primum conico-papillato, dein convexo et circa umbonem plus minusve applanato, $0.5\text{--}1.5 \text{ mm}$ lato. **Lamellis** albis, acie collarioque albis, lamellis percurrentibus $11\text{--}(14)$, lamellis nullis, latis. **Stipite** subnigro, glabro, apice primum albo, insitio, $9\text{--}11 \times 0.1 \text{ mm}$.

Sporis $5\text{--}5.7 \times 2.7\text{--}3.2 \mu\text{m}$, ellipsoideis, levibus, inamyloideis. **Hymenio**: Basidiis $18.5 \times 4.5\text{--}5.7 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis elementis epicutis simillimis. **Hyphis** pilei tramatis filamentosis, fibulatis, inamyloideis. **Epicute pilei** hymeniformi, ex elementis vesiculososis (longioribus quam latis aut latioribus quam longis), ex integro hyalinis, in parte superiore setulis $1 \mu\text{m}$

circiter projicientibus, divergentibus obsitis (typi Rotalis) efformata.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae, gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 2 I 1978, *Singer B 10465* (INPA). Additional collection: same locality, 13 VII 1977, *Singer B 10088* (INPA). This specimen is identical to the type except for the gray papilla which is inserted in the umbilicus of the pileus; the latter reaches 2 mm in diameter.

Marasmius gomezii Sing., spec. nov.

Pileo aurantio-rufescente vel brunneolo-aurantiaco, centro albo excepta papilla alba sed demum in siccis sordida, glabro vel interdum subpruinoso, sulcato sed centro levi, convexo, centro applanato, siccando umbilicato, papilla exigua, humili in siccis in umbilico praesente, diametro pilei 1–1.5 mm. **Lamellis** albidis, acie albida, collario albido, lamellis percurrentibus 7–12, lamellula 0–1, furcatis 0–1, latis. **Stipite** nigro apice albo, demum concolori, glabro, nitido, insititio, setoso, 7–10 × 0.1 mm. Rhizomorphis nigris nullis praesentibus. **Carne** tenuissima, inodora.

Sporis 7.5–9 × 4–5.2 μm, plerumque 8–8.5 × 4–4.5 μm, ellipsoideis, levibus, hyalinis, inamyloideis (Q = 1.9–2). **Hymenio**: Basidiis 12–15.5 × 4.5–6.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis ex integro hyalinis, ceterum elementis epicutis pilei simillimis. **Hyphis** pilei et tramatis hymenophoralis regularis pseudoamyloideis, stipitis fortiter pseudoamyloideis, parallelis. **Epicute pilei** ex elementis hymeniformiter dispositis, hyalinis sed setulis divergentibus (typi Rotalis) melleis obsitis ex toto vel in parte media superiore, 15–35 × 9–25 μm, setulis 1–2(–2.5) μm projicientibus.

Ad folia dicotyledonea (haud quercina), in silva tropicali-montana, gregatim.

TYPUS—Costa Rica, Alajuela, Alto Berlin, 26 VII 1981, leg. *Singer & Gómez*, *Singer B 12490* (F).

This species is similar to *M. variabiliceps* Sing., especially its var. *tucumanensis* Sing., but the unicolorous lamellae and the hyaline cheilocystidia as well as the lower number of lamellae (7–12 rather than 13–18) distinguish it. *M. variabiliceps* var. *tucumanensis* has also been collected at Alto

Berlin (*Singer B 12489*, F). *Marasmius nothomyrciae* Sing. is the only extratropical species of this stirps.

Marasmius hendecaphyllus Sing., spec. nov.

Pileus albo, in siccis et vetustis albido margineque dilute argillaceo-virgato inter strias pallidas, glabro, sulcato, convexo vel cadiformi, umbilicato vel subumbilicato, haud maculato nec umbonato nec papillato, sed obtuso, 4–6 mm lato. **Lamellis** albis acie alba, collario albo, lamellis omnibus percurrentibus, 11, rarius 12, subangustis. **Stipite** atrocastaneo vel subnigro vel nigro sed ad apicem albo vel albido, levi, glabro, setoso, aequali, insititio, nitido, 9–11 × 0.2–0.5 mm. Rhizomorphis nigris haud visis. **Carne** inodora.

Sporis 6.5–8.5 × 2–3.5 μm, oblongis vel fusoides, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiolis fusoides. Cystidiis nullis. Cheilocystidiis 23 × 17 μm, subvesiculososis, typi Rotalis modo setulosis e setulis brevibus (1.5 μm) divergentibus, hyalinis. **Hyphis** pilei lente, stipitis magis manifeste pseudoamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** ex elementis hymeniformiter dispositis, cheilocystidiis simillimis sed nonnumquam elatioribus efformata.

Ad folia coriacea Dicotyledonum in silvis tropicalibus haud inundabilibus.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 21 IV 1977, *Singer B 9783* (INPA). Additional collection: Colombia, El Valle, Dagua, Finca La Araucana, 14 IV 1968, *Singer B 6119* (F).

This species is characterized by the nonpapillate pileus which is white, not dotted, by 11 percurrent lamellae and the spore measurements. *Marasmius apatelius* Sing. and *M. vergeliensis* Sing. are related.

Marasmius hexaphyllus Sing., spec. nov.

Pileus albo, sicco albido centro pallide fulvidulo, macula atra centrali nulla, glabro, sulcato, convexo, centro applanato, in siccis subumbonato, ± 1.5 mm lato. **Lamellis** albis, acie et collario albis, lamellis percurrentibus 6, lamellulis nullis. **Stipite** subnigrobrunneo, nitido, glabro, setoso, insititio, ± 10 × 0.1 mm.

Sporis 5–7.5 × 2–3 μm, oblongis vel fusoides,

levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 12.5–13.5 × 5.5–6.5 μm; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis ex integro hyalinis, elementis epicutis pilei simillimis. **Hyphis** inamyloideis vel subinamyloideis in pileo, irregulariter intertextis. **Epicute pilei** ex elementis subhymeniformiter dispositis, triformibus: (1) illis *Marasmii pseudocupressiformis* analogis, 17–29 × 5–8.5 μm, subulato-obtusatis vel ventricosis et obtusis, integris vel basin versus aut ad apicem ramoso-bifurcatis, sed setulis haud obtectis, inamyloideis vel partim pseudoamyloideis vel amyloideis, pariete 0.3–0.8 μm instructis; (2) typi Sicci, cellulari-subisodiametricis, excrecentiis dactylomorphis erectis vel obliquis apicalibus, 5–11 × 1.5–2 μm ornatis, pariete 0.8–1 μm crassa instructis; (3) typi Marasmielli-Ramealium versiformibus, appendicibus dactylomorphis non solum apicalibus et pariete semper tenui, inamyloidea praeditis, interdum subhyphalibus et prostratis appendicibus supernis-externis tantum ornatis.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 10 I 1978, *Singer B 10513a* (INPA).

The polymorphous elements of the epicutis characterize this species which comes close to *M. chrysochaetes* Berk. & Curt., *M. pseudocupressiformis* Sing., and similar species of subsect. *Penicillati* Sing. *Marasmius hexaphyllus* differs from these in the small number of lamellae.

Marasmius horridulus Sing., Agar. mod. tax. 4th ed., p. 367. 1986.

Pileo fuligineo-brunneo, setis longissimis (usque ad medium radium pilei!) et brevioribus praesertim marginem pilei versus obsito, et margine ob eas ciliato, in maturis setorum causa indistincte concentricè zonato, setis pilei superficiei concoloribus, convexo, demum circum papillam centralem applanato, 2–4 mm lato. **Lamellis** albis vel albidis sed ad aciem late concoloribus pileo, angustis, aequalibus, ± triginta, simplicibus, perpaucis inverse furcatis, collariatis. **Stipite** nigro, glabro, setoso, aequali, insititio, 7–37 × 0.1–0.25 mm. **Carne** alba, tenui, tenaci, inodora.

Sporis 7–8.8 × 3–4 μm, oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiolis fusoides. Cystidiis nullis sed nonnullis cellulis tramatis vel subhymenii in hymenium extensis.

Cheilocystidiis numerosis cellulis percurrentibus tramatis hymenophoralis ut minime apicaliter pigmentatis et frequenter cystidiformibus consistentibus, his elementis hymeniformiter dispositis epicutis pilei simillimis sed nonnullis ex eis setulis carentibus et saepe setis brevibus intermixtis praecipue in collario. **Hyphis** tramatis pilei et hymenophori filamentosis, fibulatis; tramate pilei tenui; tramate hymenophorali regulari. **Epicute pilei** ex elementis terminalibus hypodermii hymeniformiter vel subhymeniformiter dispositis efformata et setis conspicuis interspersis. Illis elementis 19–21 × 7–7.5 μm, paucis longioribus vel brevioribus, sed nonnullis angustioribus et his interdum setulis destitutis, crassitunicatis, plerumque setulis typi Sicci apicaliter obtectis, cheilocystidiis similibus, ut minime in parte alta manifeste pigmentatis. Setis (50–)65–315(–500) × 4–8(–9.5) μm, rigidis, crasse tunicatis (1.5–5 μm), sepiaceis, obtusis. Pigmento intraparietali (frequenter in strato externo parietis tantum praesente). Hypodermio eximie alto, trichodermiali, ex elementis hyphalibus breviter ramosis, crassitunicatis, hyalinis, fortiter pseudoamyloideis efformato. Tegumento stipitis subnullo.

Ad folia dicotyledonea in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 12 VII 1978, leg. *Maria Sousa & Izonete Araujo Aguiar*, *Singer B 11272* (INPA).

This species belongs in subsect. *Horriduli* Sing. It is the type and only species of this group.

Marasmius inundabilis Sing., spec. nov.

Pileo griseo, interdum linea minuta e fissione alba circum papillam praesente, sed generatim unicolori, papilla brunnea excepta, glabro, sulcato, convexo, profunde umbilicato et in umbilico papilla centrali munito, 4–6 mm lato. **Lamellis** albis acie albis collario albedo sed siccando nigrescente, latis, subdistantibus, lamellis percurrentibus 15–17, omnibus aequalibus. **Stipite** nigro, glabro, nitido, e nodis rhizomorpharum nato et insititio, 13–20 × 0.1–0.2 mm. Rhizomorphis hinc inde nodis instructis, nigris, glabris, usque ad 100 mm longis, plerumque erectis, basi instititiis. **Carne** pilei alba, stipitis nigra, immutabili, inodora.

Sporis 14.5–18.5 × 3–4.3 μm, clavato-subfusoides, tenuitunicatis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 21–22 × 6.5–7 μm, te-

traspors; basidiolis fusoideis. Cystidiis nullis. Cheilocystidiis $15-30 \times 5-20 \mu\text{m}$, tenuitunicatis, hyalinis, interdum furcatis, paucis integris, sed plerumque typi Sicci modo apicaliter appendiculatis et elementis epicutis pilei forma simillimis, at cheilocystidiis collarii ab eis acieis differentibus et forma sua illa *Marasmii pseudocupressiformis* in mentem revocantibus, plerumque simplicibus, ventricosus vel clavatis vel ampullaceis, pigmentatis ut elementa pilei, nonnullis autem bi- vel trifurcatis, $16-25 \times 7-10 \mu\text{m}$, pariete $1-1.3 \mu\text{m}$ crassa, haud vel admodum debiliter pseudoamyloidea instructis. **Hyphis** tenuitunicatis, filamentosis, haud gelatinosis, saepe furcatis, intertextis in pileo, parallelis in stipite, pseudoamyloideis, fibulatis. **Epicute pilei** hymeniformi, ex elementis cheilocystidiis similibus sed pseudoamyloideis et eis collarii similioribus, frequentissime bi- vel trifurcatis, rarius cheilocystidiis acieis lamellarum similibus sed setulis latiusculis, obtusis, pariete $1-1.3 \mu\text{m}$ crassa, pigmento intraparietali porphyreo-brunneo vel sepiaceo.

Ad folia dicotyledonea silvae tropicalis inundabilis aquae albae (várzea), immediate ante inundatione fructificans, gregatim crescens.

TYPUS—Brazil, Amazonas, Ilha Janauari, 18 III 1983, leg. *Singer, Araujo Aguiar & Adis*, *Singer B 12441* (F).

This species is easily recognizable by its color, attachment to black rhizomorphs, dimorphic cheilocystidia and habitat.

Marasmius iodactylus Sing., spec. nov.

Pileo laete violaceo-lilacino modo uniformi, glabro, sulcato, semigloboso vel convexo, centro papillato, $0.5-0.8$ mm alto. **Lamellis** albis, acie alba, collario albo, omnibus percurrentibus et aequalibus, octo vel decem. **Stipite** biso, glabro, nitido, setoso, e rhizomorpha furcatione nato vel in substrato insitio, $10-20 \times 0.1 \mu\text{m}$, Rhizomorpha sparsis, tenuibus, levibus, concoloribus.

Sporis $6-7.5 \times 2.5-3.3 \mu\text{m}$, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $12.5-17 \times 5-6 \mu\text{m}$; basidiolis fusoideis. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei appendiculatis similibus, sed hyalinis. **Hyphis** tenuitunicatis, filamentosis, in pileo hyalinis atque lente debiliterque pseudoamyloideis, haud gelatinosis, fibulatis. **Epicute pilei** hymeniformi, ex elementis dimorphis efformata: (1) $11-18 \times 6.5-8.5 \mu\text{m}$,

ventricosus vel subvesiculosus, duobus vel plerumque multis appendiculis digitiformibus apicalibus, raro uno alterove laterali sed erecto typi Sicci ornatis, violaceis, iodi ope brunneo-rubris vel brunneo-purpureis, pariete tenui vel moderatim crassa instructis; (2) $20-30 \times 5-9 \mu\text{m}$, simplicibus et integris, ventricosus, anguste ventricosus, clavatis, ampullaceis, raro furcatis, crassinunicatis (pariete $1-1.5 \mu\text{m}$ crassa), pigmentatis ut alter typus.

Ad folia dicotyledonea in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 29 VI 1977, *Singer B 10032* (INPA).

Because of the dimorphic elements of the epicutis this species is comparable to *M. inundabilis* Sing., but seems to be more related to *M. peckii* Murr.

Marasmius izonetae Sing., spec. nov.

Pileo saturate violaceo-purpureo, unicolori, sulcato, convexo, glabro, in umbilico haud profundo papillato, ± 2 mm lato. **Lamellis** albis, acie violaceis, lamellis percurrentibus 13, lamellulis nullis, illis collariatis. **Stipite** umbrino, apice albedo, basi etiam nonnumquam albedo ac semper insitiosa praedito, glabro, setoso, $5-10 \times 0.2-0.3$ mm.

Sporis $5 \times 2.2 \mu\text{m}$, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $17-18 \times 5-6 \mu\text{m}$; basidiolis fusoideis. Cystidiis nullis. Cheilocystidiis ad aciem lamellarum heteromorpham numerosis per zonam violaceam, $13-28 \times 4.5-8 \mu\text{m}$, duobus typis cheilocystidiorum *M. iodactyli* similibus, sed cum omni forma transitoria observata, setulosus stricte typi Sicci, pariete subhyalina et tenui vel crassiuscula et violacea. **Hyphis** tramatis hymenophoralis regularis leniter sed manifeste pseudoamyloideis, filamentosis sed nonnullis inflatis, fibulatis. **Epicute pilei** hymeniformi et ex elementis cheilocystidiis simillimis efformata.

Ad folia delapsa dicotyledonea in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 8 IX 1977, leg. *Izonete Araujo Aguiar & Singer B 10138* (INPA).

The color is similar in *M. iodactylus* Sing. but it differs from the latter in the stipe which constantly grows directly from the substratum, in the edge of the lamellae which is concolorous with the

pileus, in more numerous lamellae and in the time of fructification.

Marasmius januariensis Sing., spec. nov.

Pileo albo vel albido sed macula centrali subaurantio-ochraceo vel cinnamomeo (e. gr. "yellow beige" M&P) linea vel zona candida limitata ornato, macula in siccis applanata vel sub lente leniter elevata, grisascente subpallida observata, sulcato, convexo, umbilicato, umbone manifesto et papilla centrali destituto, 3.5–17 mm lato. **Lamellis** albis, acie collarique albis, 15–17 percurrentibus, aequalibus. **Stipite** nigro, glabro, setoso, nitido, insititio, 15–34 × 0.5–0.9 mm. Rhizomorphis nigris haud visis. **Carne** inodora.

Sporis (8–)9.5–10.2 × 3–3.3 μm, fusoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 19–20 × 6–7 μm. Cystidiis nullis. Cheilocystidiis elementis epicutis zonae marginalis pilei simillimis. **Hyphis** tramatis pilei debiliter sed manifeste pseudoamyloideis, filamentosis sed multis inflatis, hyalinis, haud gelatinosis, omnibus fibulatis. **Epicute pilei** per zonam marginalem hymeniformi, ex elementis 8.5–30 × 8.5–23 μm, ex integro hyalinis, setulis divergentibus typi Rotalis 1–2 μm altis ornatis efformata.

Ad folia dicotyledonea delapsa in silva tropicali inundabili typi várzea.

TYPUS—Brazil, Amazonas, Ilha Janauari, 18 III 1983, *Singer B 12446* (F). Another (sterile) collection seems to be conspecific: Brazil, Pará, Estancia Pirelli, 7 VI 1966, *Singer B 4224* (BAFC).

This species is characteristic for the forest with periodic inundations (várzea) and is related to *M. rotuloides* Dennis and *M. vergeliensis* Sing., especially the former from which it differs in the absence of an umbo; from both it differs in larger spores.

Marasmius mesocephalus Sing., spec. nov.

Pileo ochraceobrunneo vel aurantiobrunneo, centro atro zona alba circumdato variegato, glabro, sulcato, convexo, in umbilico moderatim profunde umbonato, demum saepe centro plano in umbilico, 0.5–2 mm lato. **Lamellis** albis acie albis, collario albo, saepe demum praecipue siccando pallide aurantio-brunneo, lamellis percurrentibus 7–9. **Stipite** nigro, apice initio albo, glabro, setoso,

longo, 10–21 × 0.1 mm, rhizomorphis nigris praesentibus sed stipiti haud connexis.

Sporis 7–9.5 × 2.5–3.5 μm, fusoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 13–15.3 × 5.5–8 μm, tetrasporis vel (1–)4-sporis; basidiolis fusoideis. Cystidiis nullis. Cheilocystidis elementis epicutis pilei similibus. **Hyphis** tramatis hymenophoralis subinamyloideis vel lente leniter pseudoamyloideis, fibulatis. **Epicute pilei** hymeniformi, ex elementis globosis v. clavatis, hyalinis, setulis typi rotalis modo divergentibus, hyalinis, in zonis pigmentatis pallide brunneolis, 2–2.5 × 1–1.5 μm obsitis, sed parte basali hyalina, 12.5–22 × 8.8–18 μm.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 26 XII 1977, *Singer B 10411* (INPA). Additional collection: same locality, 8 VIII 1977, *Singer B 10136* (INPA).

Marasmius microrotalis Sing., spec. nov.

Pileo dilute alutaceo-cremeo vel carneo in vegetis, zona albida vel primum griseola maculam centralem parvam, fuligineam siccando griseam, planam vel lenissime elevatam circumdante, ceterum in siccis brunnescente (in herbario inter "wigwam" et "Cochin" M&P) et sulcato, marginem extremum versus saepe pallidiore, glabro, campanulato vel conico-truncato, umbilicato, 0.5–2 mm lato. **Lamellis** albis vel albidis, acie et collario albis, 12–15, plerumque 14 percurrentibus, latis. **Stipite** prima juventute albo, mox e basi bisofuligineo vel subnigro et demum ex integro brunneo-nigro vel nigro, macroscopice glabro sed sub lente subtiliter fibrilloso-pruinoso vel minutissime setuloso, demum glabrescente, subnitente, setoso, insititio in substrato, 2.5–19 × 0.1 mm. Rhizomorphis nigris, tenuibus, ramosis, subpruinosis vel subglabris, inconspicuis praesentibus. **Carne** alba, tenuissima, inodora.

Sporis 6.8–9 × 3–5 μm, plerumque 7–9 × 3.5–4.2 μm (Q = 2–3), ellipsoideis vel fusoideis, frequenter obclavatis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 15–20.5 × 4.5–7.5 μm, tetrasporis; basidiolis fusoideis. Cystidiis nullis. Cheilocystidiis cellulis epicutis simillimis sed plerumque ex integro hyalinis. **Hyphis** tramatis pilei lente debiliterque pseudoamyloideis, apicis stipitis fortius pseudoamyloideis, subhymenio ± pseudoamyloideo; tramate hymenophorali regulari;

hyphis omnibus fibulatis. **Epicute pilei** hymeniformi, ex elementis $10.5\text{--}27.5 \times 5.5\text{--}19 \mu\text{m}$ eformata, his hyalinis sed typi *Rotalis* modo setulis divergentibus, subaureomelleis, $1\text{--}3.5 \mu\text{m}$, plerumque $1\text{--}2 \mu\text{m}$ procurrentibus obiectis, nonnullis magis elongatis interspersis. Tegumento stipitis ex elementis hyphalibus, unicellularibus, saepe aggregatis, vacillatim ascendentibus, interdum subsetiformibus, sed tenuiter vel firme tantum tunicatis, hyalinis, inamyloideis efformato, his apicem versus et in parte media stipitis $10\text{--}35 \times 2.3\text{--}3.2 \mu\text{m}$, prope basin autem usque ad $5.5 \mu\text{m}$ latis, obtusis.

Ad folia dicotyledonea delapsa in silva tropicali primaria typi terrae firmae solitario vel gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 13 VII 1977, *Singer B 10104* (F). Additional collection: same locality, *Singer B 10105* (INPA sub nom. herb. *M. daulobius*).

This species is remarkable because of the stipe covering. *Marasmius rotalis* Berk. & Br. sensu Sing. 1964 (p. 331) from Zaire, Yangambi (*Louis 13934*, BR) is probably conspecific. *Marasmius rotalis*, typus, differs in much larger carpophores.

Marasmius minusculus Sing., spec. nov.

Pileo saturate purpureo-rubro vel purpureo-roseo, purpureo in siccis, interdum zona alba ad marginem extremum ornato, glabro, sulcato, convexo, umbilicato, umbonato vel papillato in umbilico, $1\text{--}1.5$ mm lato. **Lamellis** albis, acie alba et collario albo, percurrentibus $6\text{--}10$. **Stipite** proprio subnigro, glabro, setoso, e rhizomorphis nato, $4\text{--}28 \times 0.1\text{--}0.2$ mm. Rhizomorphis nigris $\pm 0.2 \mu\text{m}$ crassis, glabris, nodosis (carpophoris e nodis natis). **Carne** in centro pilei sat tenui, ad marginem tenuissima, alba, inodora.

Sporis $6\text{--}8.5 \times 3\text{--}4 \mu\text{m}$, plerumque $7\text{--}8 \times 3.5 \mu\text{m}$, ellipsoideis vel fusoides vel oblongis, hyalinis, inamyloideis. **Hymenio**: Basidiis $16\text{--}21 \times 6\text{--}7.5\text{--}(9) \mu\text{m}$, tetrasporis, plerumque $16 \times 7\text{--}7.5 \mu\text{m}$; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed hyalinis. **Hyphis** tramatis pilei vix vel partim debiliter pseudoamyloideis, $1\text{--}21 \mu\text{m}$ latis, fibulatis. **Epicute pilei** hymeniformi, ex elementis, $9\text{--}30 \times 6\text{--}30 \mu\text{m}$, ventricosis vel subclavatis et apice interdum obtuse bifurcatis, apicaliter typi Siccis modo setulis obsitis et his frequenter secundario-vel tertio-setulosis, tenui- vel crassitunicatis, pariete

$0.3\text{--}1.5 \mu\text{m}$ crassa, pigmento intraparietali purpureo colorata, setulis primariis $2\text{--}4.5 \times 0.5\text{--}1.5\text{--}(4) \mu\text{m}$. Elementis epicutis umbonis setulis destitutis.

Ad folia dicotyledonea delapsa in silva tropicali haud inundabili.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 9 II 1978, *Singer B 10649* (INPA). Additional collections: same locality, 26 XII 1977, *Singer B 10406a* (INPA); same locality and date, *Singer B 10431* (INPA); same locality, 2 I 1978, *Singer B 10454* (INPA); Rick, Fungi Austroamerici 202(2) (not 202) [Southern Brazil] (FH, sub nomine *M. edwallianus* f. *racemosa* Theissen).

This species, always “multiceps,” i.e., rising from black rhizomorphs, differs from *M. edwallianus* Henn. in white edges of lamellae and from *M. hippiochaetes* Berk. in glabrous stipe and rhizomorphs.

Marasmius mundulus Sing., spec. nov.

Pileo albo, macula centrali dilute vel saturate grisea, extra maculam demum pallide argillaceo (sine zona alba circum maculam), sulcato, glabro, convexo, umbilicato, obtuse papillato in umbilico, ± 0.7 mm lato. **Lamellis** albis, acie alba, collario albo, percurrentibus octo, aequalibus. **Stipite** castaneo apice albo, demum subnigro ex toto, glabro, nitido, setoso, insititio, $\pm 6 \times 0.1$ mm. In herbario aciebus lamellarum interdum nonnullis argillaceis.

Sporis $(4\text{--})5\text{--}6\text{--}(7) \times 2.5 \mu\text{m}$, oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $12\text{--}13.5 \times 5\text{--}5.5 \mu\text{m}$, tetrasporis. Cheilocystidiis elementis epicutis pilei simillimis. **Hyphis** lente moderatim pseudoamyloideis in tramate pilei, in tramate hymenophorali regulari haud vel vix pseudoamyloideis, in apice stipitis manifeste pseudoamyloideis, fibulatis. **Epicute pilei** hymeniformi, elementis $12\text{--}23 \times 10\text{--}15 \mu\text{m}$, setulosis typi *Rotalis* modo, setulis $1\text{--}2.5 \times 0.5\text{--}1 \mu\text{m}$, et corpore basali hyalinis.

Ad folia dicotyledonea delapsa in silva tropicali primaria typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 13 VII 1977, *Singer B 10092* (INPA).

This species is related to *M. brachysporus* Sing. but has narrower spores and fewer lamellae.

Marasmius nanorotalis Sing., spec. nov.

Pileo albo, interdum argillaceo in juvenilibus, dein dilute argillaceo vel argillaceo-pallido, demum nonnumquam argillaceo-brunneo et tunc zona pallidior circum papillam munito, sed plerumque tali zona et semper zona alba absente, nisi cum margine iam albo conflueret, glabro, sulcato, convexo vel semiglobato, dein convexo et umbilicato, papillato (papilla semiglobata, dein in umbilico inserta, argillaceo-brunnea, atrobrunnea vel nigra), minuto, 0.4–1.5 mm lato. **Lamellis** albis, acie et collario albis, percurrentibus 7–10, sat latis, lamellis nullis. **Stipite** atrocastaneo vel nigro apice hyalino-albo in juvenilibus, glabro, setoso, 9–22 × 0.1 mm insitio in substrato. **Rhizomorphis** nigris haud visis. **Carne** tenuissima, alba, inodora.

Sporis 8.5–12 × 2.8–3.5(–4) μm, plerumque 10–11 × 3.3–3.5 μm (Q = 2.7–3.5), oblongis vel fusoidis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis (11–)15–20 × 4–7.8 μm, tetrasporis; basidiolis fusoidis. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed totis hyalinis. **Hyphis** tramatis pilei hyalinis, in pileo et tramate hymenophorali regulari debiliter sed manifeste pseudoamyloideis, plerumque filamentosis, fortiter pseudoamyloideis in apice stipitis. **Epicute pilei** extra umbonem hymeniformi, ex elementis 14–20 × 8–21 μm, setulis 1–2.5 μm longis divergentibus typi *Rotalis* modo, hyalinis vel brunneis obsitis, parte basali hyalina, vesiculosus vel subvesiculosus-ventricosus, tenuitunicatis. Papilla ex hyphis multiseptatis (cellulis e. gr. 8 × 5 μm) conniventibus eformata, elementis terminalibus, superficialibus haud setuligeris sed hymeniformibus, tenuitunicatis, inamyloideis, papillae pigmento atropadiceo, manifeste intraparietali.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae primariae, plerumque gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 2 I 1978, *Singer B 10459* (INPA). Additional collections: same locality, 22 VII 1977, *Singer B 10115*, and 29 VII 1977, *Singer B 10127*.

What may be a variety of *M. nanorotalis* with flesh-pinkish pileus when dried, deep brown papilla, and scarcely pseudoamyloid hyphae, the papilla covered by elements which are almost like those of sect. *Androsacei*, has all other characters of the typical form described above. It is much rarer than the latter, but comes from the same locality, *Singer B 10429*.

Marasmius neorotula Sing., spec. nov.

Pileo dilute argillaceo (“nougat” vel “almond biscuit,” sicco “thrush” vel “bran” M&P), centro albo vel albido, frequenter macula pallide argillacea zona alba sub lente rivulosa circumdata ornato, sulcato et interdum (forma reticulato-venosa, *Singer B 10236*) subtiliter reticulato-venoso inter sulcos, glabro, convexo, umbilicato, demum frequenter applanato, papilla destituto, 5–15 mm lato. **Lamellis** pallidissime alutaceo-cremeis vel albis, acie pallide argillaceis in siccis sed lateribus concoloribus in vegetis, collario generatim aciebus concolori, lamellis percurrentibus 9–13, omnibus aequalibus, in forma reticulato-venosa (*Singer B 10236*) intervenosis sed frequentius haud intervenosis, sat latis vel moderatim latis, haud ventricosus. **Stipite** castaneo vel nigro, apice primum albo, interdum in vetustis apice etiam albo, glabro, setoso, insitio, 11–24 × 0.2–0.5 mm. **Rhizomorphis** nigris separatis sparsis vel nullis. **Carne** alba, immutabili, tenui, inodora.

Sporis (5.5–)6–7.8(–8) × 3.3–4.8 μm, ellipsoideis, plerumque leniter applanatis in parte suprahilari, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 15–19 × 6–7.5 μm, tetrasporis, basidiolis fusoidis. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed plerumque totis hyalinis. **Hyphis** tramatis pilei et hymenophoralis regularis partim inamyloideis, partim debiliter pseudoamyloideis, in stipite parallelis et manifeste pseudoamyloideis, omnibus fibulatis, haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis hyalinis setulis typi *Rotalis* ornatis aut hyalinis aut melleis, parte basali vesiculosa vel subvesiculosa, tenuitunicata, 10–19 × 6–18 μm, setulis 2–3.7 μm projicientibus.

Ad lignum arborum dicotyledonearum in silva tropicali primaria typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 X 1977, *Singer B 10208* (INPA). A reticulate-venose form was collected together with the type (*Singer B 10236*, INPA).

Of all tropical species, this is the one most similar and most related to *M. rotula* (L. ex Fr.) Fr. *Marasmius dodecaphyllus* Sing. is also close.

Marasmius perrarus Sing., spec. nov.

Pileo brunneolo-aurantiaco, siccando badio (“chutney” M&P), areis pallidioribus interdum

praesentibus sed zona alba circum papillam margini concolorem destituto, glabro, ad ipsum marginem sulcato-crenato, sed ceterum levi, convexo, umbilicato, in umbilico papillato, 3 mm lato. **Lamellis** albis acie alba, percurrentibus novem, una furcata, paullum intervenosis, latis, collariatis. **Stipite** atro, simplici, glabro, setoso, nitido, insititio in substrato, 17×0.1 mm. Rhizomorphis atris tenuibus, glabris praesentibus sed cum stipite haud connexis. **Carne** alba, tenui, inodora.

Sporis (9–)10.5–12.5 \times (3–)5.2–6 μm , plerumque $\pm 12 \times 5.5 \mu\text{m}$, ellipsoideis vel fusoides vel oblongis, depressione suprahilari institutis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 25–30 \times 10.5–12.5 μm , (2–)4-sporis. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed plerumque ex integro hyalinis. **Hyphis** tramatis pilei et tramatis hymenophoralis regularis plerumque hyalinis et filamentosis, intertextis, tenuitunicatis, fibulatis, inamyloideis sed nonnullis debiliter pseudoamyloideis intermixtis, haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis 18–26(–29) \times 11–15 μm , parte basali tenuitunicata, hyalina vel brunneolo-mellea, apicaliter setulis 4–7 \times 1–2 μm brunneolo-melleis vel aureo-melleis, obtusis, typi Sicci modo obsitis efformata.

Ad folia delapsa dicotyledonea in silva primaria tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 11 V 1977, *Singer B 9856* (INPA).

Marasmius polycladoides Sing., spec. nov.

Pileo in siccis roseolo-cinnamomeo-ochreo papilla atropurpurea vel purpureo-atra ornato sed zona pallida circum papillam destituto, glabro, sulcato, convexo, papillato, primum haud umbilicato, dein papilla in umbilico haud profundo inserta, 1.5–2.5 mm lato. **Lamellis** in siccis margini pilei concoloribus aciebus pallidis et collario pallido, percurrentibus 9–11. **Stipite** atrocastaneo vel fusco, primum sub lente setis minutis hispidello, dein glabrescente, setoso, e nodis vel partibus internodosi nato et insititio, 3–5 \times 0.1 mm. Rhizomorphis stipite crassioribus (usque ad 0.4 mm crassis), hispidellis, insititiis in stipulis. Colore vegeto et odore (si ullus) ignotis, sed in siccis coloris “India spice” (M&P) correspondet.

Sporis 5–6.5 \times 3–4 μm , ellipsoideis, firme tunicatis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 22–24 \times 4.5–5.5 μm , tetrasporis; basi-

diolis fusoides. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed plerumque ex toto hyalinis. **Hyphis** in tramate hymenophorali regulari hyalinis, tenuitunicatis, inamyloideis, filamentosis, fibulatis. **Epicute pilei** hymeniformi, ex elementis 10 \times 4.5–10 μm , raro longioribus, hyalinis in parte basali, sed apicaliter typi Sicci modo setulosis, setulis hyalinis vel succineo-melleis (in ammoniaco), 2–5.5 \times 0.5–1.5 μm , acutis vel frequentius obtusis. Tegumento stipitis ei *Marasmi* *hippochaetis* simili.

Ad stipulas Pteridophytorum emortuas in silva tropicali.

TYPUS—Panamá, San Blas, in semita a Puerto Obaldia Darien versus inter 0 et 100 m alt., 22 VI 1975, *Dumont PA 914* (NY).

This species is similar and related to *M. hippochaetes* Berk., *M. microdendron* Sing., *M. polychaetes* Sing., and *M. schultesii* Sing., especially the first and second. It differs in shorter spores and habitat from all these.

Marasmius praegranspermus Sing., spec. nov.

Pileo ferrugineo (“India R, Arabian R” M&P), siccato atroferrugineo, circum maculam fuliginream centralem zona rivulosa, dilute brunneolo-ochrea variegato, glabro, sulcato, convexo, umbilicato, in umbilico plano vel vix papillato, 4–6 mm lato. **Lamellis** albis, acie et collario albis, percurrentibus 11, sat latis, haud intervenosis. **Stipite** nigro, glabro, setoso, insititio in substrato, 27 \times 0.3 mm. Rhizomorphis et telepodiiis nigris praesentibus sed stipiti haud connexis.

Sporis 28–31.5 \times 4.5–5.5 μm , lanceolato-aculeiformibus apice rotundatis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 25–36 \times 5.5–11.5 μm , tetrasporis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis elementis epicute pilei similibus, sed generatim nonnihil minoribus et ex toto hyalinis. **Hyphis** in tramate pilei et in tramate hymenophorali regulari pseudoamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis 16–30 \times 7.5–18.5 μm , saepe formae manus humanae similibus, aliis integris, in parte basali hyalinis vel dilute melleo-brunneolis, setulis apicalibus typi Sicci modo ornatis, his 3.5–9 \times 0.8–1.8(–4) μm , obtusis, paucis subacutis, brunneis vel melleo-brunneis, multis cellulis iodi ope ex toto purpureis, vel colore immutatis.

Ad venas centrales foliorum dicotyledoneorum in silva primaria tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 VI 1977, *Singer B 9993* (INPA).

This species is remarkable because it has the largest spores of all representatives of sect. *Marasmius*.

Marasmius pseudocupressiformis Sing., spec. nov.

Pileo albo vel albido, in siccis albido, maculo centrali fuligineo-griseo vel fuligineo, exiguo variegato, sulcato, glabro, doliiformi vel conico-truncato, centro applanato, in siccis leniter umbilicatum et umbone minuto atro obtuso in umbilico elevato, 0.4–0.7 mm lato. **Lamellis** albis, acie collarioque albis, latis, percurrentibus novem, omnibus aequalibus. **Stipite** brunneo vel nigro, glabro, setoso, nitido, in nodis rhizomorpharum insititio, 7–8 × 0.1–0.2 mm. Rhizomorphis stipiti concoloribus, glabris, 0.1–0.2 mm crassis. **Carne** alba, tenuissima, inodora.

Sporis 9.5–11 × 4–4.5 μm, oblongis vel fusoides, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 24–25 × 7.5 μm, clavatis, tetrasporis; basidiolis fusiformibus. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis. **Hyphis** filamentosis subintertextis, hyalinis, fibulatis, tenuitunicatis, manifeste pseudoamyloideis, haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis dimorphis efformata, his (1) 15–16 × 8.5–10.5 μm, subvesiculosas, hyalinis, (2) 21–30 × 6–9 μm, fusoides, apice obtusis, hyalinis vel subhyalinis, tenui- vel firme tunicatis (pariete usque ad 0.5 μm crasa), plerumque pseudoamyloideis sed multis inamyloideis; interdum cellulis intermediis inter duos typos occurrentibus.

Ad folia delapsa dicotyledonea in silva tropicali primaria, typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 2 III 1978, *Singer B 10743* (INPA).

This species is remarkable because of the shape of the cheilocystidia and the elements of the epicutis of the pileus, all without setulae. The diagnosis given above corresponds to var. *pseudocupressiformis*. Other varieties are as follows:

1. Stipites e rhizomorphis nati, rarius e substrato, foliicolae.

Var. **hendecaphyllophorus** Sing., var. nov.

A var. *pseudocupressiformis* differt pileo ± 1 mm lato, lamellis percurrentibus 11.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 29 II 1978, *Singer B 10665* (INPA).

Var. **intermedius** Sing., var. nov.

A varietatibus praecedentibus pileo pallidissime argillaceo, centro atro-papillato papilla zona candida circumdata variegato, 0.5–1 mm lato et stipite interdum in substrato, frequentius in rhizomorphis insititio et paucis elementis epicutis uno vel duobus appendiculos apicalibus munitis, frequentius autem integris differt. Lamellis percurrentibus 8–10.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 2 III 1978, *Singer B 10764* (INPA).

2. Stipites rhizomorphigeni, lignicolae.

Var. **alboflavescentulus** Sing., var. nov.

A var. *pseudocupressiformis* differt habitatione in ligno et sporis angustioribus (7.5–9.5 × 2.8–4 μm, plerumque 8.5–9 × 3–3.8 μm) nec non pileo albo flavescente.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 9 II 1978, *Singer B 10620* (INPA).

3. Stipites in substrato nati, lignicolae.

Var. **conspicuus** Sing. var. nov.

A var. *intermedio* differt carpophoris majoribus, pileo 1.5–4 mm lato; stipite 25–27 × 0.1 mm; sporis etiam paullum majoribus (9–11.7 × 3.5–5 μm in hac, 8.5–9(–10) × 3.5(–4.2) μm in var. *intermedio*); stipite semper in substrato nato et lignicola differt.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 10 I 1978, *Singer B 10514* (INPA).

Var. *atripes* Sing., var. nov.

A var. *conspicuo* pileo 0.7–2 mm lato et sporis (7–)7.5–9 × (3.3–)3.8–5.5 μm nec non stipitis colore atro vel brunneo vel castaneo differt.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 X 1977, *Singer B 10223* (INPA). Additional collection: same locality, 18 I 1978, *Singer B 10547* (F).

It is possible that *M. pseudocupressiformis* var. *pseudocupressiformis*, together with var. *intermedius*, also var. *conspicuus* and var. *atripes*, taken together, and finally var. *alboflavescentulus* might represent three autonomous species. But with few collections of each at hand, I hesitate to propose this at the moment. These and the whole stirps *Pseudocupressiformis* differ from other species of the section in the absence of setulae-bearing cells in the epicutis and lamellae edges, but several species are known to contain elements both smooth and with setulae and these form the transition to the rest of subsect. *Penicillati* Sing.

Marasmius rubromarginatus var. *albilamellatus* Sing., var. nov.

A var. *rubromarginato* differt lamellis pileo haud concoloribus ad aciem.

Ad folia monocotyledonea, rarius dicotyledonea, in silva tropicali primariae typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 18 V 1977, *Singer B 9663* (INPA). Additional collections: same locality, 21 IV 1977, *Singer B 9771* (INPA); same locality and date, *Singer B 9786* (INPA); same locality, 3 VI 1977, *Singer B 9921* (INPA).

In this variety, the lamellae of the fresh carpophores are uniformly white but occasionally at the margin of the pileus and often at the whole edge ferruginous-reddish punctate when dried.

Marasmius scleronematis Sing., spec. nov.

Pileo albo vel albido, dein praesertim siccando argillaceo vel grisello brunneo (e. gr. “nougat” vel “almond” M&P), centro macula atra, brunneola, fuliginea, zona lata alba circumdata variegato, gla-

bro, sulcato, convexo, umbilicato, papilla nulla vel in umbilico subpapillato tantum in siccis, 1.5–2.2 mm lato. Lamellis albis acie collarioque albis, percurrentibus (15–)17–18(–20). Stipite albo, mox sordide ochreo ad basin et gradatim atrocastaneo apice albo, demum castaneo-subnigro, glabro, nitido, setoso, 20–30 × 0.1 mm. Rhizomorphis nigris haud visis. Carne alba, tenui, inodora.

Sporis 4.5–7.5 × 2–3.5 μm, oblongis, paucis ellipsoideis, levibus, hyalinis, inamyloideis, ad latus adaxiale applanatis. Hymenio: Basidiis 11–12 × 4–5 μm, tetrasporis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis hyalinis setulis inclusis, ceterum elementis epicutis pilei simillimis. Hyphis tramatis pilei et tramatis hymenophoralis regularis hyalinis, inamyloideis vel vix pseudoamyloideis, fibulatis, haud gelatinosis. Epicute pilei hymeniformi ex elementis 14–30 × 9–18 μm, saccatis vel subvesiculosis, hyalinis, firme vel leniter subcrassiuscule tunicatis, apice typi Rotalis modo setulis divergentibus hyalinis vel brunneolis vel ochreo-melleis 1.5–3 × 1–1.2 μm ornatis efformata.

Ad folia *Scleronematis micranthae* Ducke delapsa in silva tropicali primariae typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 X 1977, *Singer B 10209* (INPA). Additional collection: same locality, 9 II 1978, *Singer B 10615* (INPA).

This species is related to the following species as well as to *M. cundinamarcae* Sing. It differs from these species in the absence of a papilla or umbo and in not or scarcely (only in superposition weakly) pseudoamyloid hyphae and mostly 17–18 lamellae; from *M. cundinamarcae*, it also differs in the size of pileus and stipe and in habitat (host and forest type different).

Marasmius terraefirmae Sing., spec. nov.

Pileo primum albo vel albido, mox in zona inter umbilicum et marginem et dein in tota superficie centro excepto argillaceo (14 H 9 M&P); umbone albido-sordido vel griseo vel fuscidulo in vegetis, siccando argillaceo-griseolo vel biso-subatro vel vix mutato, circulo zonario albo limitato in vegetis, in siccis obvio, glabro, sulcato, convexo, primum prominenter umbonato umbone obtuso, dein umbilicato et umbone manifesto in umbilico ornato, 2.5–4(–6) mm lato. Lamellis albis, acie albis,

collario albo sed interdum siccando subargillaceo, percurrentibus 18–26, plerumque \pm 19–20. **Stipite** fusco dein nigro apice primum albo, glabro, setoso, insititio, 9–19 \times 0.1–0.2 mm. Rhizomorphis atris haud visis. **Carne** alba, tenui, inodora.

Sporis 5–7.5 \times 2.3–3.5 μm , plerumque 5.5–6.2 \times 3–3.2 μm , fusoides vel oblongis, nonnullis ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 15–17 \times 4.5–5.5 μm ; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis hyalinis, forma sua elementis epicutis pilei simillimis. **Hyphis** in tramate pilei et tramate hymenophorali regulari hyalinis, lente et debiliter sed sine dubio nonnihil pseudoamyloideis, fibulatis. **Epicute pilei** hymeniformi, ex elementis + subvesiculosi 14–26 \times 12–24 μm , hyalinis vel subhyalinis sed setulis typi *Rotalis* divergentibus subhyalinis vel argillaceo-brunneolis ornatis, his 1–2.5 \times (0.2–)0.5(–1) μm .

Ad folia dicotyledonea diversa delapsa in silva tropicali primaria typi terrae firmae gregatim, rarius solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 II 1978, *Singer B 10690* (INPA). Additional collections: same locality, 30 I 1978, *Singer B 10561* (INPA); same locality and date, *Singer B 10561a* (INPA); same locality, 23 III 1978, *Singer B 10830* (INPA).

This species is very close to the preceding. One of our collections (B 10570) has larger carpophores (pileus 6 mm broad; lamellae 18) but has an umbo like the type collection, although the hyphae of the pileus are inamyloid. This form which may seem intermediate between both these species reminds one somewhat of the forms around *M. hylaicola* Sing. This latter species, however, has a very different pileus color.

Marasmius xyloendron Sing., spec. nov.

Pileo rosaceo, umbone brunneo in vegetis et in siccis, glabro, papilla mediana in centro applanato pilei convexi ornato, 1–1.2 mm lato. **Lamellis** albis, acie albis, collario subappresso albido, adnatis, latis vel latissimis, distantibus (octo percurrentibus, omnibus aequalibus). **Stipite** castaneo, subnigro in siccis, glabro, setoso, rhizomorphis insititio, \pm 5 \times 0.1 mm. Rhizomorphis stipiti concoloribus, glabris vel raro exrescentiis hyphalibus obsitis, insititiis, longis, 0.1–0.2 mm crassis. **Carne** alba, tenuissima, inodora.

Sporis 5.5–7.2 \times 2.8–3.7 μm , plerumque 6–7 \times 3–3.3 μm , ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 16 \times 6.5–7 μm , tetrasporis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed omnibus hyalinis. **Hyphis** hyalinis, debiliter vel haud pseudoamyloideis, fibulatis. **Epicute pilei** in parte pilei rosacea hymeniformi, ex elementis 13–19 \times 5.5–9.5 μm , subclavatis, saepe firme vel crasse (usque ad 1 μm diam.) tunicatis, ad apicem setulis ornatis, et interdum furcatis vel lobatis, setulis 1.5–2 μm projectantibus, plerumque obtusis, hyalinis vel (plerumque) rosaceis (pariete hyalinis vel roseolis in ammoniaco) efformata; umbonis epicute hymeniformi vel subhymeniformi, ex elementis integris, haud setuligeris, usque ad 17 \times 6 μm , subcylindraceis vel subclavatis, pariete crassa lutea instructis efformata. Tegumento stipitis subnullo, nonnullis exrescentiis hyphalibus admodum sparsis exceptis, hyphis in eis inamyloideis (sed hyphae stipitis tramatis parallelae manifeste pseudoamyloideae).

Ad lignum emortuum in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 X 1977, *Singer B 10216* (INPA).

Sect. Hygrometrici

Marasmius pichinchensis Sing., spec. nov.

Pileo aurantio-brunneo, sublevi vel sulcato, obtuso, campanulato-convexo vel convexo, \pm 0.5 mm lato. **Lamellis** albis dein pallide grisello-cremeis, distantibus, 4–6 percurrentibus, lamellulis vel furcatis nullis vel una praesente, angustis vel mediocriter latis, subliberis vel liberis. **Stipite** subnigro, siccando brunneo, apice frequenter pallidior, glabro vel subglabro, insititio in rhizomorphis vel in substrato, breviusculo. Rhizomorphis stipiti concoloribus praesentibus et cum basi stipitis frequentissime connexis.

Sporis 8–10.8 \times 3.5 μm , fusoides-oblomgis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 17–18 \times 5.5–6.5 μm , tetrasporis; basidiolis fusoides. Cystidiis (17–)26–28.5 \times 5.5–6.8 μm , ampullaceis, tenuitunicatis, hyalinis. Cheilocystidiis elementis epicutis pilei simillimis sed pallidioribus vel hyalinis. **Hyphis** hyalinis, inamyloideis, anguste filamentosis, haud gelatinosis, fibulatis. **Epicute pilei** hymeniformi, ex elementis (10–)14–20 \times 5–13.5 μm , late ventricosis vel vesiculosi, typi

Rotalis modo in medio vel tres quartis superioribus ornatis, setulis succineo-brunneis, 1–1.7 μm longis, pariete \pm 1 μm crassa hyalina vel succineo-brunnea in corpore basali instructis, et inter ea nonnullis hyphis terminalibus succineo-brunneis nec non nonnullis dermatocystidiis efformata, dermatocystidiis cystidiis hymenialibus simillimis. Elementis setuliferis perpaucis ad apicem usque ad 2 μm crasse tunicatis et permultis ad basin tenuiter vel firme tunicatis.

Ad folia dicotyledonea delapsa in silva tropicali-montana gregatim.

TYPUS—Ecuador, Pichincha, 24 km from section of the Quito-Machachi road along the new road, 7 VIII 1975, *Dumont EC 2368* (NY).

This species differs from *M. minutus* Peck (= *M. capillipes* Sacc. = *M. pyrinus* Ellis) in the presence of rhizomorphs from which many of the stipes rise. It differs from *M. ilicis* Sing. because of the smaller number of percurrent lamellae and the often rhizomorphigenous stipe. The following species have less elongated spores and do not form conspicuous rhizomorphs.

Marasmius pseudominutus Sing., spec. nov.

Pileo castaneobrunneo vel badio, ad marginem interdum aurantio-brunneo, sulcato, campanulato, obtuso 1.5–2 mm lato. **Lamellis** pileo pallidioribus in siccis, sed albis vel albidis in vegetis, 5–7 percurrentibus, subangustis vel moderatim latis, ascendentibus, demum horizontalibus, haud collariatis adnatis. **Stipite** atrocastaneo vel subnigro, glabro vel subglabro macroscopice, setoso, 6–13 \times 0.1 mm., insitio in substrato. Rhizomorphis haud visis.

Sporis 6.5–10 \times (3–)4–5 μm , ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 19–22.5 \times (5–)7–8.5 μm , tetrasporis, interdum cum paucis bisporis mixtis; basidiolis fusoides. Cystidiis cystidioliformibus vel vix profundius natis quam basidia, 15–25 \times 4.3–8.5 μm , ampullaceis, hyalinis, tenuitunicatis, apice 4–7 \times 1.3–5 μm , ad latera et acies lamellarum sat numerosis sed moderatim conspicuis, interdum ad latera elementis cheilocystidiis simillimis intermixtis. Cheilocystidiis ad et prope aciem lamellarum subheteromorpham numerosis, rarius sparsis, aut elementis epicutis pilei simillimis sed

maxima e parte pallidioribus aut dimorphis (1) 9–20 \times (4.5–)8.5–15 μm , ad apicem crasse (1.5–3 μm) tunicatis et brunneis, (2) pariete firma vel tenui apice incluso, et apice haud discolori, omnibus setulis typi *Rotalis* modo per unam vel duas tertias superiores obsitis, setulis 1–2(–4.5) μm longis, ochraceo-melleis. **Hyphis** filamentosis, hyalinis et tenuitunicatis vel firme tunicatis in pileo et in tramate hymenophorali regulari, in stipite parallelis, pariete pigmentatis, omnibus fibulatis et haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis utriusque typo cheilocystidiorum simillimis et tunc episcopice variegatis efformata, sed interdum typo secundo sparso vel raro, 8–21 \times 6.5–14 μm . Tegumento stipitis ex hyphis saepe ut cheilocystidia setulosis sed dermatocystidiis nullis visis.

Ad folia arborea et herbacea dicotyledonea delapsa in silva tropicali-submontana.

TYPUS—Panama, Panamá, 2–3 km N of El Llano-Carti road in leaves of *Cecropia* sp., 200–250 m alt., 29 VI 1975, *Dumont P 1488* (NY). Additional collections: Venezuela, Sucre, on herbaceous sticks, 15 VII 1972, *Dumont et al.* (NY); Bolivia, La Paz, Nor-Yungas, Rio Llolosa, on tough dicotyledonous leaves, 31 I 1956, *Singer B 758* (LIL). Both these collections had not been separated by me from *M. ilicis* Sing.

Specimens of *M. ilicis* Sing., typus, have spores 7–9 \times 3.5–3.8 μm . Thus, in *M. pseudominutus*, with spores (3–)4–5 μm broad, the latter are decidedly broader. Furthermore, *M. pseudominutus* has 5–7, *M. ilicis* \pm 10 percurrent lamellae. While the host in sect. *Hygrometrici* is mostly rather specific, in *M. minutus* Peck and *M. pseudominutus* it is variable. *Marasmius minutus* grows on leaves of *Syringa*, *Acer*, *Ulmus*, *Fraxinus*, *Populus*, *Pyrus* and has smaller spores (mostly 6–7.8 \times 2.5–3.3 μm , rarely larger) than *M. pseudominutus*. *Marasmius minutus* and *M. corbariensis* (Roume-guere) Sing. are the only species of the section which occur in the northern extratropical zone, but the following species occurs in the temperate zone of the southern hemisphere.

Marasmius sphaerodermatoides Sing., spec. nov.

Pileo atrocastaneo (prope “leafmold” M&P) ad marginem brunneo (“Cochin” M&P), in siccis unicolori (“kis kilim” M&P), convexo, centro mox

leniter depresso vel applanato, sulcato, glabro, 1.5–3.5 mm lato. **Lamellis** albis, mediocriter latis, 8–14 percurrentibus, raro una cum lamellula aut una vel duabus furcatis, nonnumquam una vel duabus perangustis immixtis, attenuato-subliberis. **Stipite** castaneo, apice in juvenilibus albo, in parte superiore subtiliter pruinoso sed macroscopice glabro, in parte inferiore haud pruinato, setoso, insititio, $\pm 20 \times 0.2$ mm. Rhizomorphis nullis. **Carne** tenuissima, alba, inodora.

Sporis 7–8 \times 3.5–4.2 μm , ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 20–27 \times 6–7.2 μm , tetrasporis. Cystidiis 24–27 \times 5–7 μm , apice ± 2 μm diam., ampullaceis, ad latera sparsis, acie versus frequentioribus, hyalinis, integris. Cheilocystidiis (saepe sparsis) elementis epicutis pilei simillimis sed plerumque pallidioribus. **Hyphis** in pileo et apice stipitis tenuitunicatis vel nonnullis crassiuscule tunicatis, fibulatis, inamyloideis, haud gelatinosis. **Epicute pilei** hymeniformi, ex elementis 11–23 \times 9–17.5 μm , obpiriformibus vel globosis, typi Rotalis modo setulis 1.2–2.2 \times 0.4 μm , divergentibus obsitis efformata, his castaneis vel ochraceo-brunneis, nonnullis hyalinis vel subhyalinis vel melleis, corpore basali pariete superne crassa (1–2.5 μm), hyalina, straminea, pallide ochracea instructo. Tegumento stipitis ex hyphis corticalibus verticalibus externis distanter diverticulato-spinulosus et dermatocystidiis dimorphis ut minime in parte superiore stipitis efformato: (1) $\pm 23 \times 8$ μm , apice e gr. 7.2 \times 1.8 μm , ampullaceis, hyalinis; (2) $\pm 11 \times 4.2$ μm , clavatis vel cylindraceis, typi Rotalis modo diverticulis sterigmatoideis, 1.5–2.5 μm longis, divergentibus obsitis, brunneolis vel brunneolo-hyalinis; his cheilocystidiis, illis cystidiis hymenialibus analogis.

Ad folia delapsa *Ligustri* nec non ad folia *Eryngii* in silvis extratropicalibus.

TYPUS—Argentina, Buenos Aires, Parque Peryra, 20 VI 1962, *G. E. Horak, Singer S 201* (BAFC).

This species can be distinguished from others by the dimorphous dermatocystidia of the stipe and it is the only one that has been observed in the province of Buenos Aires. *M. sphaerodermis* var. *major* Speg. (An. Soc. Cient. Arg. 10: 126. 1880) is identical. It is possible that the large-spored forms of *M. minutus* which have been reported (M. S. Gilliam, Mycotaxon 4: 109. 1976) in North America actually belong to *M. sphaerodermatoides*.

Sect. *Androsacei*

Marasmius campinaranae Sing., spec. nov.

Pileo griseolo-brunneo, glabro, levi, convexo, obtuso, haud umbilicato, 2–3 mm lato. **Lamellis** pileo concoloribus sed ad aciem subpallidis, percurrentibus 10–12, compluribus lamellis intermixtis, sed haud didymis, mediocriter latis, moderatim distantibus, variabiliter adnexis. **Stipite** atrobrunneo, in parte inferiore pubescentia concolori, in parte superiore pubescentia hyalina oblecto sed demum glabrescente, aequali, setoso, insititio, 15 \times 0.1 mm. Rhizomorphis nigris cum stipite haud connexis et telepodiis praesentibus. **Carne** tenuissima, inodora.

Sporis (8.5–)9–13 \times 3.2–4.5 μm ($Q = \pm 3$), oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 25 \times 8.5 μm , tetrasporis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis in acie heteromorpha 24–37 \times 9–16 μm , ventricosos-clavatis vel subvesiculosus, levibus vel sinuosis, paucis vel multis ad apicem nonnullis appendicibus digitiformibus ornatis, omnio hyalinis. **Hyphis** in tramate pilei et in tramate hymenophorali regulari hyalinis, haud latinosis, subparallelis, 2–4 μm latis, fibulatis, eis pilei supra hymenium haud pigmentatis, superne gradatim magis brunneo-incrustatis, omnibus inamyloideis. **Epicute pilei** non hymeniformi sed trichodermiali, ex elementis intertextis, nonnullis ex eis latissimis (usque ad 30 μm diam.), atrobrunneo-incrustatis, cellulis terminalibus saepe dermatocystioides et plerumque appendiculis simplicibus vel furcatis apicalibus et interdum etiam lateralibus ornatis efformata. Hypodermio ex hyphis plerumque radiatim dispositis, brunneo-incrustatis, 3–5 μm latis efformato. Tegumento stipitis prope basin ex elementis piliformibus efformato; pilis basin versus crasse (1–2 μm deorsum, 0.4–0.7 μm apicem versus) tunicatis, cylindraceis, 27–95 μm longis, strato externo parietis brunneo, interno hyalino, apice rotundatis, 5–9 μm latis, sed ad basin usque ad 23 μm incrassatis efformato; pilis hyalinis apicis stipitis eis Marasmii hakgalensis simillimis.

Ad folia coriacea dicotyledonea delapsa in silva tropicali arenosa typi campinaranae gregatim.

TYPUS—Brazil, Amazonas, along road Manaus-Caracará, km 45, 28 II 1979, *Singer B 10724* (INPA).

Marasmius campinaranae is in its habitat rather common and may be considered ambiguous between *Marasmius*, sect. *Androsacei* and *Maras-*

miellus because of the inamyloid trama but in view of the hairs of the stipe, quite similar to those of *M. hakgalensis* Petch, appears to belong in the neighborhood of the latter. It differs from *M. hakgalensis* in much larger spores.

Marasmius polylepidis var. **jujuyensis** Sing., var. nov.

Pileo centro haud depresso sed minute papillato et praesentia rhizomorpharum nigrarum a var. *polylepidis* differt. Ad folia *Polylepidis australis* Bitter.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 16 II 1966, *Singer T 5202* (F).

Marasmius tasmaniensis Sing., spec. nov.

Pileo in siccis pallide sordideque brunneolo, margine pallidiore, glabro, sulcato, convexo, centro applanato vel lenissime depresso, in depressione minute papillato, ± 3 mm lato. **Lamellis** albidis, distantibus, 7–9 percurrentibus, nonnullis margini haud porrigentibus, aliis furcatis, aliis leniter anstomosantibus, moderatim latis, intermixtis, adnatis vel adnexis. **Stipite** atrofusco vel nigro in maturis, glabro, nitido, setoso, insititio, 20–40 \times 0.1–0.2 mm. Rhizomorphis nigris numerosis sed cum stipite haud connexis. **Carne** tenui, inodora.

Sporis (5.5–)6.5–7.5 \times 3.2–3.5 μ m, ellipsoideis vel oblongis, neque fusoides neque cylindraceutis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 16.5–23 \times 6.5–7.5 μ m, tetrasporis; basidiolis subfusoides. Cystidiis nullis. Cheilocystidiis 7–25 \times 3.5–10 μ m, setulis plerumque apicalibus et acutis, numerosis, leniter divergentibus 1.5–3(–4) \times 0.5(–1) μ m obsitis, tenuitunicatis et hyalinis clavatis. **Hyphis** in pileo inamyloideis, hyalinis, filamentosis, 3–6.5 μ m diam., aliis tenuitunicatis, aliis pariete 0.7–1 μ m instructis, fibulatis; eis stipitis parallelis, pigmento intraparietali sed haud incrustante in strato corticali coloratis, debiliter pseudoamyloideis in parte interna. **Epicute pilei** haud hymeniformi, sed ex hyphis irregulariter dispositis versus superficiem ipsam diverticulis plerumque obtusis 2–3 \times 1–1.3 μ m exasperatis efformata. Hypodermio ex hyphis repentibus hyalinis, intermittenter pallide fuscidulo-ochraceis sed haud manifeste incrustatis efformato. Tegumento stipitis nullo, sed hyphis externis corti-

calibus, praesentibus ad apicem stipitis, minute diverticulatis.

Ad folia nothofaginea delapsa gregatim in silvis nothofagineis.

TYPUS—Australia, Tasmania, near Florentine River, Adamsfield Track, 400 m alt, 42°43'S; 146°24.5'E, 27 I 1977, *J. Engel 13629* (F).

This new species is related to *M. pilgerodendri* Sing. and *M. yalae* Sing., both from southern South America. From the latter it differs in the presence of blackish rhizomorphs and the host; from the former in less distinctly pseudoamyloid hyphae and narrower and less numerous lamellae. *Marasmius androsaceus* (L. ex Fr.) Fr. has strongly incrusting pigment in the epicutis of the pileus as well as in the hypodermium, but this species as previously cited from Australia and New Zealand may well belong to *M. tasmaniensis*. *Marasmius eucalypti* Berk. has conspicuous dermatocystidia on the stipe (Pegler).

Marasmius truncorum Sing., spec. nov.

Pileo gilvo, centro pallidiore, ex toto demum leniter pallescente, glabro, haud viscido, ad marginem sulcato, in siccis vix planis, convexo, mox centro leniter depresso, obtuso, ± 3 mm lato. **Lamellis** albis, distantibus, percurrentibus typice novem, e lamellulis tridymis, haud intervenosis, ventricosis, adnexis. **Stipite** subatro, pubescentia hyalina tecto, aequali, insititio, setoso, $\pm 18 \times 0.1$ mm. Rhizomorphis nigris praesentibus, sed cum stipitibus haud connexis, stipite subtenuioribus, pubescentibus. **Carne** inodora.

Sporis (5.5–)6.3–8 \times (2.5–)3.3 μ m, ellipsoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 16–20 \times 5.7 μ m, tetrasporis; basidiolis fusoides vel anguste clavatis vel subcylindraceutis. Cystidiis nullis. Cheilocystidiis ad aciem vix heteromorpham inter basidia et basidiola 10–16 \times 5–8 μ m, versiformibus, ex appendiculis digitiformibus apicalibus et frequenter etiam lateralibus scobiformibus et interdum subramosis, appendiculis 2–6 \times 1 μ m, omnino hyalinis et inamyloideis. **Hyphis** pilei et tramatis hymenophoralis regularis filamentosis, hyalinis, defibulatis, inamyloideis vel lenissime pseudoamyloidis, in stipite parallelis, subcrassitunicatis, multis ex eis pseudoamyloideis, in rhizomorphis pseudoamyloideis. **Epicute pilei** haud hymeniformi sed ex elementis intertextis diverticulis ascendentibus

et erectis ornatis, hyalinis vel leniter brunneo-incrustatis efformata. Hypodermio ex elementis hyphalibus magis pigmento incrustatis quam in epicute, sat latis efformato. Tegumento stipitis pilis subhyalinis vel stramineis vel pallide fulvis, crasse (1–2 μm , apicem versus subtenuius) tunicatis 18–61 \times 4–7 μm , ad apicem plerumque rotundatis efformato. Tegumento ex elementis piliformibus eis stipitis simillimis, plerumque subfulvis efformato.

Ad lignum emortuum arborum in silva tropicali.

TYPUS—Brazil, Amazonas, Ponta Negra, 2 VII 1978, *Singer B 11267* (INPA).

Descriptio antecedens ad var. *truncorum* refert.

Marasmius truncorum var. **ramorum** Sing., var. nov.

A var. *truncorum* lamellis minus distantibus—percurrentibus 16–17—nec non habitatione et area geographica differt. Ad stipulas ligneas ramorum et ramulorum in silva tropicali-montana quercubus dominata solitario.

TYPUS—Costa Rica, Cartago, El Empalme, 2300 m alt., 25 VII 1981, *Singer B 12416* (F).

Sect. Sicci

Marasmius adisianus Sing., spec. nov.

Pileo subferrugineo-aurantiaco, interdum, praecipue in siccis vibicibus radialibus pallidioribus variegato sed haud albido-virgato, in centro levi vel minutissime venoso-corrugato, ferrugineo, ceterum fortiter sulcato per quatuor quintas partes radii, conico-applanato, obtusato vel umbone exigu centrali ornato, 12–14 mm lato. **Lamellis** albis, acie albis sed siccano partim, praesertim stipitem versus, pileo concoloribus, haud intervenosis, rarius paucis venis interlamellaribus notatis, medioeriter latis, medioeriter distantibus vel subdistantibus (13–15 percurrentibus), subliberis, interdum subcollariatis. **Stipite** castaneo, apice albo sed circum lamellas, praecipue in siccis, colore pilei cingulato, glabro, levi, aequali, 49–51 \times 0.8 mm. Mycelio basali tomentoso, sparso.

Sporis 11–12 \times 3–3.5 μm , fusoides, interdum leniter curvulis, levibus, hyalinis, inamyloideis.

Hymenio: Basidiis 24.5–25 \times 4.7–5.5 μm , basidiolis fusoides, acutis. Cystidiis moderatim numerosis et moderatim conspicuis, 26–34 \times 5.5–7.5 μm , versiformibus, saepe clavatis, utriforibus, nonnullis apice truncatis vel appendiculatis uno vel duobus appendiculis apicalibus, sterigmatoideis vel subcapitatis, opacis, hyalinis, profundius radicanibus quam basidia, sed ultra basidia vix projicientibus, nonnullis incrustatione tenui resinacea fragmentata pallide ochrea obtectis, pariete firma instructis. Cheilocystidiis elementis epicutis pilei simillimis sed hyalinis, setulis hyalinis vel luteolis. **Hyphis** in pileo et tramate hymenophorali regulari hyalinis, irregularibus et diametro variabili, intertextis, tenuiter vel firme tunicatis (pariete 0.2–0.4 μm), haud gelatinosis, fortiter pseudoamyloideis, \pm 3–10 mm latis, fibulatis. **Epicute pilei** hymeniformi, ex elementis interdum exiguis, hyalinis, setulis apicalibus typi Sicci modo ornatis, setulis plerumque luteolis, 5–10 μm longis instructis, pariete firma munitis efformata.

Ad folia dicotyledonea delapsa in silva inudabili aquae albae (várzea), gregatim.

TYPUS—Brazil, Amazonas, Lago Janauari, 18 III 1983, leg. *Singer, Adis & Araujo Aguiar*, *Singer B 12454* (INPA).

This species is to be inserted between *M. spezzinii* Sacc. and *M. pseudocorrugatus* Sing. It differs from the latter in color, from the former in more distant lamellae, from both in habitat and less conspicuous cystidia. The species is dedicated to Dr. J. Adis whose merits in the ecological exploration of the várzea are herewith acknowledged.

Marasmius asemiformis Sing., spec. nov.

Pileo saturate ferrugineo-aurantiaco, centro aurantio-ferrugineo, in junioribus saturate rufescente-castaneo, centro levi sed circum centrum saepe corrugato-venoso, haud sulcato, glabro, convexo et obtuso, dein centro applanato vel leniter depresso vel umbilicato, 14–15 mm lato. **Lamellis** albis vel albidis, acie in vegetis et siccis albis vel albidis, angustis vel moderatim latis, confertissimis, haud intervenosis, adnexis vel liberis. **Stipite** primitus albo, mox castaneo vel brunneo in parte inferiore, ex integro pruinoso vel pubescente pubescentia alba, praesertim notabili in parte inferiore, aequali, 34–39 \times 1–1.2 mm. Mycelio basali

fibrilloso, in siccis fulvescente, interdum sparso. **Carne** alba, immutabili, inodora.

Sporis 7–11 × 2.5–3.7 μm, plerumque 8–10 × 3.2–3.7 μm, fusoides, interdum fusoides-subcylindraceis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 18–23 × 5–6.5 μm, tetrasporis; basidiolis fusoides. Cystidiis rarissimis, interdum absentibus, ampullaceis, hyalinis, ± 25 × 10 μm. Cheilocystidiis 8–17 × 5–6.5 μm, clavatis vel ventricosis, typi Sicci modo setulis apicalibus 4–20, plerumque 5–10 × 1–1.5 μm, acutis vel rarius obtusis ornatis, tenuitunicatis, ex integro hyalinis. **Hyphis** in tramate hymenophorali regulari hyalinis, filamentosis, interdum usque ad 15 μm inflatis, et tunc saepe multiseptatis, omnibus pariete tenuissima vel tenui, pseudoamyloidea instructis, fibulatis, haud gelatinosis. **Epicate pilei** hymeniformi, ex elementis typi Sicci modo setulosis efformatis, corpore basali 11–15 × 5–8 μm, tenuitunicato, hyalino, setulis (3–)4–9 μm longis, plerumque acutis vel subacutis, rarius magis elongatis aut obtusatis, aureo-flavis. Tegumento stipitis dermatocystidiis versiformibus, hyalinis, integris, raro apice bilobis, tenuiter vel firme tunicatis, numerosis, 10–50 × 3–9 μm, aut clavatis et brevibus aut utriformibus aut ventricosis et mucronatis aut subfilamentosis e. gr. 41 × 3 μm, hinc inde leniter inflatis (usque ad 5 μm) aut cylindricis vel ventricosis et brevibus, saepe bilobis, aut ampullaceis et 28–34 × 5.5–7 μm aut late ventricosis vel subvesiculosis et 10–16 × 5–9 μm aut ventricosis cum appendiculo digitali laterali.

Ad detritum et petiola foliorum dicotyledoneorum in silva secundaria argillosa.

TYPUS—Brazil, Amazonas, Manaus, 20 III 1983, *Singer B 12457* (F). Additional collection: same locality, 22 VI 1981, *Singer B 12194* (F).

This species is related to *M. asemus* (see below) and *M. araucariae* Sing.

Marasmius asemus Sing., spec. nov.

Pileo laete ferrugineo, marginem versus leniter pallidiore, glabro, levi, convexo, centro applanato vel subumbonato, margine demum frequenter elevato, 6–13 mm lato. **Lamellis** albis, angustissimis, linearibus, frequenter furcatis, sed haud intervenosis, confertissimis, adnexis. **Stipite** fulvo-castaneo, apice albo, subtiliter pruinato ex integro, aequali, cavo, 30–33 × 0.8–1.2 mm. Mycelio basali

abundante, e pallido fulvescente. **Carne** tenui, inodora.

Sporis 9–11.5 × 3.5–4.5 μm (Q = 2.3–2.6), oblongis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 22 × 6 μm, tetrasporis; basidiolis fusoides. Cystidiis 27–30 × 6–6.7 μm, subclavatis vel sat anguste ventricosis, interdum 1-appendiculatis vel capitulatis, pariete tenui, tum firma, refringente, hyalinia praeditis, contentu visibili destitutis. Cheilocystidiis elementis epicutis pilei simillimis sed omnibus ex integro hyalinis. **Hyphis** pilei et hymenophori hyalinis, tenuiter vel crasse, plerumque firme tunicatis, pseudoamyloideis, fibulatis. **Epicate pilei** hymeniformi, elementis omnibus typi Sicci modo setulosis; corpore basali 14–20 × 5.5–9.5 μm, hyalino vel flavido-hyalino, tenuiter vel firme tunicato; setulis hyalinis vel flavido-hyalinis vel aureo-melleis, 6.5–10 μm longis, acutis, vel subacutis vel rarius obtusis, conicis. Tegumento stipitis e dermatocystidiis numerosissimis, integris, satis angustis efformato, his (10–)20–30 × 3.5–6.5 μm, versiformibus, hyalinis vel subhyalinis, obtusis, raro bifurcatis vel breviter appendiculatis vel capitulatis, frequenter subcylindraceis.

Ad folia dicotyledonea delapsa in silva primaria tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 18 I 1978, *Singer B 10545* (INPA). Additional collection: same locality and date, *Singer B 10546* (INPA).

Marasmius asemiformis and *M. araucariae* Sing. are related. The first one has somewhat smaller spores, somewhat broader lamellae, and less distinct cystidia than *M. asemus*; the second of these species differs from *M. asemus* in absence of cystidia and a different host. *Marasmius chrysolepharis* Sing. has discolorous lamellar edges and somewhat narrower spores.

Marasmius centroamericanus Sing., spec. nov.

Pileo atrobrunneo (inter “moose” et “bark” M&P) vel leniter clariore sed in siccis semper subbatro, sed in vegetis et siccis coriicolore radialiter variegato secundum sulcos sat profundos, glabro vel subvelutino, primum subhemisphaerico-convexo, mox centro depresso, dein convexo, centro abrupte sat profunde depresso, 15–34 mm cc. lato. **Lamellis** albidis vel albis, distantibus, haud inter-

venosis, sat latis, subliberis. Sporis in massa albis. **Stipite** tabacino-brunneo, saepe magis fulvo-brunneo ad apicem, glabro, aequali, cavo, $\pm 50-75 \times 2-3$ mm, apice interdum dilatato usque ad 6.5 mm diam.; mycelio basali alba, fibrilloso. **Carne** pilei alba.

Sporis $7-9.3 \times 2-3 \mu\text{m}$ (paucis in typo), levibus, inamyloideis. **Hymenio**: Basidiis $15-26 \times 4.8-6.5 \mu\text{m}$, tetrasporis; basidiolis fusioideis. Cystidiis nullis. Cheilocystidiis $9-19 \times 6-6.5 \mu\text{m}$, subcylindricis, hyalinis et setulis typi Sicci modo apicalibus spinulosis hyalinis vel brunneo-hyalinis, $1-3 \mu\text{m}$ altis ornatis. **Hypis** tramatis hymenophoralis regularis hyalinis, haud gelatinosis, sat latis ($5-15 \mu\text{m}$ diam.), tenuiter tunicatis, fibulatis, pseudoamyloideis. **Epicute pilei** hymeniformi, ex elementis ut cheilocystidia setulosis efformata; corpore basali exiguo, $5-9 \times 2.5-4.5 \mu\text{m}$, plerumque subhyalino; setulis $5-8 \times 1-1.3 \mu\text{m}$, in centro apicis erectis, ceterum saepe obliquis, brunneis, paucis hyalinis, acutis. Tegumento stipitis nullo.

Ad lignum (Pini) et acus nec non ad folia dicotyledonea delapsa et gramina emortua in silvis tropicali-montanis vel subalpinis.

TYPUS—Costa Rica, Alajuela, prope viam Canas-Upala, Río Chiquito, X 1982, *Gómez 18649* (F).

A collection from Mexico, Puebla, Paso de Cortés, 3600 m alt., *Guzmán 4696* (MEX) seems to belong to the same species. This and the type of *M. centroamericanus* differ from *M. napoensis* Sing. in relatively narrower spores and the absence of broom cells on the stipe. *Marasmius leoninus* Berk. differs in the color of the pileus.

Marasmius costaricensis Sing., spec. nov.

Pileo sordide purpureo (prope "Morocco R," in siccis "carbuncle" M&P), in sulcis pallidioribus, intra sulcos obscuriore, glabro, profunde sulcato, sed sulcis brevibus, centro venoso-rugoso vel scrobiculato, interdum unilateraliter sublevi, e convexo sat late depresso, 20–21 mm lato. **Lamellis** cremeo-albis, sat latis, subventricosis, haud intervenosis, liberis vel subliberis. **Stipite** castaneo, glaberrimo, ad apicem dilatatum purpurascence-castaneo et subtiliter punctulato, sub lente partim innate sericeo-striato, levi, subaequali, $65 \times 0.6-0.7$ mm. Mycelio basali praesente. **Carne** pilei alba.

Sporis ($7.5-8-9 \times 3-3.7(-4) \mu\text{m}$), oblongis vel

subfusioideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis $28-30 \times 6-7 \mu\text{m}$, clavatis, tetrasporis; basidiolis plerumque fusioideis. Cystidiis cystidioliformibus, rarissimis, aut sine appendiculo et sine setulis aut appendiculo unico tenuissimo elongato apicali aut compluribus setulis $2-2.5 \mu\text{m}$ longis apicalibus ornatis, omnino hyalinis et tenuitunicatis. Cheilocystidiis ad aciem heteromorpham setuligeris typi Sicci modo, corpore basali e. gr. $17 \times 6.5 \mu\text{m}$, tenuitunicato, cylindraceo vel clavato, setulis obtusis $5-5.5 \mu\text{m}$ longis. **Hypis** monomorphis, tenuitunicatis, fibulatis, haud gelatinosis, pseudoamyloideis in pileo hyalinis. **Epicute pilei** hymeniformi ex elementis dimorphis efformata, (1) cellulis clavato-pedicellatis vel subcylindraceis, interdum sursum furcatis, ad apicem setulis plus minusve erectis typi Sicci modo ornatis, cinnamomeis in corpore basali $15-39 \times 5.5-11 \mu\text{m}$; setulis interdum flexuosis vel digitiformibus, $3-13 \times 1-2(-3) \mu\text{m}$, brunneolo-rubris, (2) $11.5-22 \times 5.5-12 \mu\text{m}$, setulis destitutis, vesiculosis vel ventricosis, totis hyalinis; pigmento typi primeri in KOH pallescente (in corpore basali usque ad melleum pallidum vel bubalinum, in setulis usque ad melleum colorem).

Ad folia emortua in silva tropicali.

TYPUS—Costa Rica, Heredia, near Puerto Viejo, OTS Station "La Selva", 22 XII 1979, *D. J. Lodge 284* (F).

This species is related to *M. corrugatus* Pat. and *M. leoninus* Berk., but differs in its characteristic colors.

Marasmius shideiae Sing., spec. nov.

Pileo albo, mox partim grisascence vel umbrino ($14 \text{ G } 7$ vel $8 \text{ E } 11 \text{ M\&P}$) vel nonnihil dilutioribus, glabro, subzonato, convexo, frequenter umbilicato vel centro depresso, usque ad 27 mm lato. **Lamellis** albidis, in siccis fusciscentibus, moderatim latis, confertis, haud intervenosis ($2-3$ pro mm ad marginem pilei; $25-28$ percurrentibus), sinuatis. **Stipite** albido, mox vel maturitate subsepiaceo ut minime in siccis, ex integro pruinato, $26-39 \times 1-1.5$ mm. Mycelio basali sordide albo. **Carne** alba in siccis pileis.

Sporis $8.7-11 \times 3.5 \mu\text{m}$, subfusioideis, ad latus interius plerumque applanatis, levibus, hyalinis inamyloideis. **Hymenio**: Basidiis $19-33 \times 5-6.5 \mu\text{m}$, tetrasporis; basidiolis fusioideis. Cystidiis nul-

lis. Cheilocystidiis ad et prope aciem lamellarum numerosis, e. gr. $15 \times 5.5 \mu\text{m}$ (sine setulis), cylindraceis vel subcylindraceis vel clavatis, typi Sicci modo setulosis, hyalinis, setulis $5\text{--}20 \mu\text{m}$ longis, submelleo-ochreis vel stramineis vel hyalinis, acutis, interdum furcatis, ad latera lamellarum usque ad $150 \mu\text{m}$ supra aciem ascendentibus. **Hyphis** tramatis hymenophoralis regularis subparallelis, hyalinis, pseudoamyloideis, fibulatis, haud gelatinosis, usque ad $18 \mu\text{m}$ latis et tenuitunicatis. **Epicute pilei** hymeniformi, ex elementis $8\text{--}19 \times 5\text{--}9 \mu\text{m}$ (sine setulis), typi Sicci modo setulosis, hyalinis vel flavidis setulis concoloribus $3.5\text{--}6 \times 1\text{--}1.3 \mu\text{m}$, acutis, parietibus omnibus tenuibus instructis efformata. Tegumento stipitis e dermatocystidiis e. gr. $10 \times 4.5 \mu\text{m}$ (sine setulis), cheilocystidiis similibus efformato, sed setulis hyalinis vel stramineo-hyalinis usque ad $20 \mu\text{m}$ longis, frequenter furcatis, acutis, parietibus omnino firmis, setulis apicalibus tantum ad divergentibus.

Ad Bambuseas (*Phyllostachys henonis* Mitford).

TYPUS—Japan, Kyoto City, Yamashina-ku, Zushioku, 24 VIII 1983, *Shidei M 645* (F).

This species, related to *M. spissus* Gilliam and *M. heterocheilus* Sing., is easily distinguishable from both. It is dedicated to the collector.

Marasmius submarginatus Sing., spec. nov.

Pileo primum subcinnamomeo ("spice" vel "gold Br" M&P), dein subferrugineo ("feuille morte" vel "spa-tan" M&P) glabro, primum substriato dein sulcato, campanulato-convexo et obtuso in juvenilibus, dein convexo et centro applanato vel leniter depresso generatim circum umbonem obtusum humilemque sed magis manifestum in siccis, $8\text{--}21 \text{ mm}$ latis. **Lamellis** albis vel pallidis, acie in vegetis albis vel albidis sed siccando linea angusta pileo concolori et frequenter intermittente marginatis, didymis, latis, plerumque \pm ventricosis, $13\text{--}15$ percurrentibus, distantibus vel subdistantibus, adnexis ad discum ferrugineum. **Stipite** brunneo apice albo, dein saturate castaneo apice albedo, cavo, aequali, $37\text{--}61 \times 1\text{--}1.5 \text{ mm}$. Mycelio basali fibrilloso, albo, fulvescente. **Carne** alba, inodora.

Sporis $7.8\text{--}9.5(10.5) \times 3.5\text{--}5 \mu\text{m}$, ellipsoideis, ovato-oblongis, oblongis, fusoides, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $23\text{--}33 \times 6\text{--}7 \mu\text{m}$. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis sed plerumque angustior-

ibus, setulis hyalinis vel fulvo-ochraceis. **Hyphis** pilei hyalinis, tenuitunicatis, intertextis, $3\text{--}9 \mu\text{m}$ latis, pariete tenuissima vel firma praeditis sed haud dimorphis, septis (secundariis exceptis) fibulatis, haud gelatinosis, pseudoamyloideis; eis stipitis parallelis, pariete $0.2\text{--}0.4 \mu\text{m}$ crassa instructis, in parte inferiore stipitis pigmentatis pigmento intraparietali. **Epicute pilei** hymeniformi, ex elementis typi Sicci modo setulosis efformata; corpore basali $12\text{--}20 \times 6\text{--}15 \mu\text{m}$, vesiculoso et plerumque pedicellato vel clavato, plerumque hyalino; setulis $1\text{--}7 \times 1\text{--}1.5 \mu\text{m}$, erectis, hyalinis vel fulvo-ochraceis, acutis vel obtusis, numerosis. Tegumento stipitis cellulis setuligeris et pilis et dermatocystidiis omnino destituto, subnullo.

Ad lignum putridum quercinum inter folia, gramina, humum gregatim.

TYPUS—USA, Illinois, White Pine State Park, 1 IX 1975, *Singer N 7539* (F).

This species is comparable to no other species of North America, but comes closest to *M. beniensis* Sing., *M. napoensis* Sing., *M. leoninus* var. *aberrans* Sing., and *M. centroamericanus* Sing.

Marasmius tephromelanus Sing., spec. nov.

Pileo griseo, in siccis fuligineo vel nigro-castaneo, rarius griseo-fusco sordide variegato, centro atrogiseo vel griseo-brunneo, glabro, longe et profunde sulcato in maturis, conico-campanulato, dein convexo, obtuso vel minute papillato, $7\text{--}12 \text{ mm}$ lato, $5\text{--}10 \text{ mm}$ alto. **Lamellis** albis vel sordide albidis, acie pileo concoloribus, $7\text{--}8$, distantibus, mediocriter latis vel latis, spatiis interlamellaribus saepe griseis, haud intervenosis, liberis. **Stipite** umbrino vel atrobunneo vel interdum castaneo, apice primum albo vel albedo, glabro, $20\text{--}22 \times (50) \times 0.2\text{--}0.5(1) \text{ mm}$. Mycelio basali plerumque sparso, albedo vel (in siccis) pallide fulvidulo, tomentosum vel strigoso. **Carne** inodora.

Sporis $10\text{--}14 \times 3.3\text{--}4.3 \mu\text{m}$, plerumque $11\text{--}12 \times 3.5 \mu\text{m}$, fusoides, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $25\text{--}28 \times 6.8\text{--}7 \mu\text{m}$, tetrasporis; basidiolis fusoides. Cystidiis nullis. Cheilocystidiis elementis epicutis pilei simillimis. **Hyphis** pilei hyalinis vel subhyalinis, pseudoamyloideis, fibulatis, diametro variabili ($3.3\text{--}17 \mu\text{m}$). Elementis **epicutis** subhyalinis, setulis brunneis vel subfuliginis acutis vel subacutis apicalibus ornatis.

Ad lignum arborum dicotyledonearum e. gr.

Nectandrae sed interdum ad folia putrescentia transiens, solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 VI 1977, *Singer B 9913* (INPA). Additional collections: Colombia, El Valle, Buenaventura, Finca La Flora, 3 IV 1968, *Singer B 6310* (F); and Brazil, Amazonas, 30 km N of Manaus, *Singer B 9838* (INPA).

The collections *Singer B 6310* and *Singer B 9838* are slightly different although they agree in all essential characters including the characteristic gray color of the pileus. *Singer B 6310* does not turn blackish on drying and *Singer B 9838* is larger than the type collection.

Sect. *Alliacei*

Marasmius calhouniae Sing., spec. nov.

Pileo pallide grisello-bubalino, dein fumoso vel flavido-griseo vel rarius olivaceo-brunneo, plus minusve hygrophano, siccando pallescente centro striisque albicantibus, demum grisello-flavidis, in siccis grisellis (in vegetis sec. collectorem 3 C atque D 2, dein 4 D atque 2–3, disco striisque 4 B atque C 4 Methuen), glabro, plicato-striato ad marginem et in parte centrali circum discum, margine subincurvo, convexo, dein repando, demum centro vix vel late depresso, 5–30 mm lato. **Lamellis** albidis, distantibus, mediocriter latis, adnatis vel subdecurrentibus. **Stipite** pileo concolori vel partim pallido, glabro macroscopice, 25–35 × 1–3 mm. Mycelio basali praesente, albido. **Carne** pilei alba, pro ratione fragili in vegetis.

Sporis (8–)9–12.5(–13.8) × 4(–5) μm, plerumque 9–10.2 × 4 μm, oblongis, ad latus interius minus convexis vel subdepressis, depressione suprahilari destitutis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 21–43 × 5.5–6.5 μm, (2–)4-sporis; basidiolis fusoides vel filamentosis vel anguste clavatis, ad basin fibula nulla. Cystidiis ad acies et latera lamellarum praesentibus, ad aciem magis numerosis, 22–66 × (5–)6–11.8 μm, ventricosis, plerumque ad apicem subcapitatum constrictis, obtusis, tenuiter vel firme tunicatis sed haud crasse tunicatis, nonnullis subrefringentibus, nonnullis longe pedicellatis, hyalinis, ad basin defibulatis. **Hyphis** pilei et tramatis hymenophoralis regularis hyalinis, haud gelatinosis, defibulatis, in stipite 2–18 μm diam. parallelis, in pileo haud vel vix pseudoamyloideis, in stipite nonnullis lenis-

sime superpositione pseudoamyloideis, aliis inamyloideis. **Hyphis** oleiferis paucis, ± 6 μm crassis sed hinc inde dilatatis usque ad 13 μm. **Epicute pilei** hymeniformi, ex elementis 15–26 × 7–19 μm, integris, ventricosis vel subventricosis vel subvesiculosus, pedicellatis, tenuitunicatis, hyalinis, inamyloideis efformata; dermatocystidiis differentiatis nullis. Tegumento stipitis ex elementis eis epicutis pilei simillimis, vix hymeniformiter dispositis (quamquam certis in locis sat dense aggregata sint), frequenter pedicello magis elongato praeditis efformato.

Ad folia acerosa delapsa *Sequoiae*, *Pseudotsugae*, *Pini*, gregatim, interdum fasciculatim.

TYPUS—USA, California, Marin County, Audubon Canyon Ranch, II XI 1981, *C. Calhoun 81-2606* (F). Additional collections: same locality, 21 XI 1981, *C. Calhoun 81-2703* (F); same locality, 29 XI 1981, *C. Calhoun 81-2770* (F, SFSU).

Considering the very slightly and only partly pseudoamyloid reaction of some hyphae of the trama and the habitat which varies between collybioid and omphalioid, *M. calhouniae* may be thought to be intermediate between sect. *Alliacei* and sect. *Globulares*, and the absence of clamp connections and the pigments remind one of *Hydropus*. However, *Hydropus* has no continuous hymeniform epicutis. For this reason *M. calhouniae* is closer to *Marasmius* sect. *Alliacei* where some species are now known to lack clamps (or have very few) and/or to show weakly pseudoamyloid stipe-trama reaction. Such species have been combined in subsect. *Hydropodoides* Sing. (*Flora Neotropica Mon.* 32: 120. 1982). These species are: *M. marasmiioides* (Sing.) Sing., *M. hydropodoides* Sing.; and *M. dauliporpus* Sing. *M. calhouniae* is closely related to these.

Marasmius dauliporpus Sing., spec. nov.

Pileo albo, glabro, levi, dein leniter striato-sulcato sed haud per totum marginem, haud viscido, convexo, mox centro depresso, 12–16 mm lato. **Lamellis** albis, subdistantibus vel distantibus, angustis, haud intervenosis, adnatis vel subdecurrentibus. **Stipite** albo, basin versus luteo, dein fulvo (sed prima juventute omnino albo), ex toto pruinato, basin versus attenuato, 19–22 × 2.5 mm. **Carne** alba.

Sporis 6–7.5 × 3.5–4.5(–5.3) μm, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis

22–33 × 5–7.3 μm, plerumque 22–25.5 × 6–6.8 μm, tetrasporis, paucis bisporis, multis fibula basali destitutis, paucis fibulatis. Cystidiis nullis. Cheilocystidiis ad aciem lamellarum inter nonnulla basidia numerosis, 31–32 × 8–9.5 μm, ventricosis et sub apice capitato vel subcapitato (5.5–6.5 μm diam.) constrictis (ibi 4.5–5.5 μm diam.), tenuitunicatis, hyalinis. **Hyphis** ad septa primaria et secundaria plerumque defibulatis, ad primaria in tramate pilei et stipitis raro fibulatis, inamyloideis sed in stipite nonnullis fasciis hypharum debiliter pseudoamyloideis, parallelis vel subparallelis, 3–18 μm latis; tramate hymenophorali regulari, hyphis hic paucis debiliter pseudoamyloideis vel vix pseudoamyloideis, haud gelatinosis. Hyphis oleiferis sat numerosis, filamentosis, 1.5–4.5 μm diam.; etiam nonnullis hyphis 18.5–25 μm latis, contentu amorpho vel filiformi insignibus praesentibus. **Epicute pilei** hymeniformi, ex elementis 14–39.5 × 8–19.5 μm, clavatis vel ventricosis vel subvesiculosus, ± pedicellatis, integris et levibus, nonnullis corpusculo interno amorpho gaudentibus, sed plerumque optice vacuis; dermatocystidiis hic haud differentiat. Tegumento stipitis e numerosis elementis eis epicutis pilei simillimis, e. gr. 23 × 19 μm ad basin haud fibulatis, sed multis dermatocystidiis intermixtis, his cheilocystidiis simillimis, e. gr. 40–85 × 9–21 μm, i. e. saepe magis voluminosis.

Ad folia quercina delapsa in silva tropicali-montana.

TYPUS—Costa Rica, Cartago, El Empalme, 2300 m alt., 23 VII 1981, *Singer B 12410* (F).

This species is closely related to *M. calhouniae* and differs in smaller spores, nearly absent pileus-pigment, yellow or fulvous pigmentation of the stipe, absence of pleurocystidia, and different habitat.

Marasmius guanacastensis Sing., spec. nov.

Pileo griseolo margine albido, sed frequenter exto leniter brunneolo-ochrascente, glabro, haud viscido, levi, convexo, papillato, 9–12 mm lato. **Lamellis** albis, horizontalibus, angustissimis, haud intervenosis, adnatis. **Stipite** albido, dein subgriseolo vel alutaceo-bubalino, macroscopice glabro sed sub lente subtiliter pubescente, fortius ad apicem, aequali, in substrato saepe inserto, 12–25 × 0.7–1 mm. Mycelio basali sericeo-lanoso vel fibrilloso, albo, sparso. **Carne** alba, tenui, inodora.

Sporis 6–8 × 2.5–4 μm, plerumque 6–7 × 3–3.5 μm (Q = ± 2), subfusoideis, rarius fusoideo-ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 13–19 × 5–6 μm, tetrasporis (an omnia?); basidiolis fusoideis vel non fusoideis. Cystidiis inconspicuis, 17–20 × 5 μm, ampullaceis, tenuitunicatis, rarius fusoideis, paucis et cystidioliformibus. Cheilocystidiis e cellula minuta basali 3–5.5 × 2.5–5.5 μm natis, 8–26 × 1.5–4 μm, simplicibus vel bifurcatis, strictis rigidisque, pariete tenui vel firma instructis, obtusis vel rarius acutis, incrustatione tenuissima applicata resinacea iodi ope confluyente et castanescente obtectis, interdum ex hyphis subjacentibus immediate (sine corpusculo basali) formatis; acie lamellarum heteromorpha. **Hyphis** tramatis hymenophoralis regularis filamentosis, 1.5–3.3 μm latis, paucis magis inflatis, haud gelatinosis, inamyloideis, stipitis parallelis, filamentosis, firme tunicatis, paucis tenuiter tunicatis, inamyloideis, fibulatis (paucis septis simplicibus visis). **Epicute pilei** epitheliali sed plerumque uni-stratosa, ex elementis vesiculosus, subisodiametricis vel isodiametricis, tenuiter vel firme tunicatis, in margine pilei hyalinis vel subhyalinis, inamyloideis, 20–21 × 19 μm efformata; dermatocystidiis haud visis. Tegumento stipitis ex elementis cheilocystidiis simillimis sed saepius haud incrustatis et tenuitunicatis, numerosis, 10–26 × 2–4 μm efformato.

Ad lignum putrescens in silvis quercinis (*Quercus oleioides*) tropicalibus gregatim.

TYPUS—Costa Rica, Guanacaste, Parque Nacional de Santa Rosa, 25 VI 1981, *Singer B 12470* (F).

This species is remarkable because of the shape of its cheilocystidia and the elements of the covering of the stipe.

Marasmius hydropodoides Sing., spec. nov.

Pileo fusco-fuligineo (“moose” vel “bark” M&P), unicolori, subglabro macroscopice in vegetis sed in maturis frequenter subtiliter rimuloso in centro et rivulosulo marginem versus, levi in centro sed longe et fortiter sulcato marginem versus, haud viscido, convexo, dein leniter depresso vel fortiter depresso in centro et margine primum incurvo dein applanato vel convexulo, 27–54 mm lato. **Lamellis** albis sed frequenter spatio interlamellari atro, in maturis intervenosis, subdistantibus, ad aciem frequenter bisis, adnatis, rarius

breviter decurrentibus. **Stipite** albo, dein e basi gradatim fulvo et demum apicem versus fuscido, subtiliter pubescente, sed demum glabrescente in parte inferiore, haud atro-maculato, haud viscido, haud nitido, solido, aequali vel basin versus minime attenuato, ad ipsam basin plerumque leniter dilatato et interdum ibi cum vicinis connato, 50–70 × 2–4 mm. **Carne** alba, immutabili, carnosoteni; odore nullo; sapore miti.

Sporis 5–7.5 × (2.5–)3–4 μm, ellipsoideis, paucis cylindraceis, ovoideis, clavatis, levibus, gutta centrali olei impletis, hyalinis, inamyloideis, acyanophilis. **Hymenio:** Basidiis 25–31(–33) × 5.5–8 μm, tetrasporis; basidiolis cylindraceis vel frequentius fusoideis. Cystidiis metuloideis numerosis ad aciem et latera lamellarum, (50–)70–117 × 12–22 μm, obtusis, crassitunicatis in parte media, tenuius vel tenuiter tunicatis ad apicem et ad basin, plerumque ventricosis vel ventricosoclavatis, interdum utrifirmibus vel ampullaceis, pariete usque ad 3.5 μm crassa instructis, haud in crustatis (neque crystallis neque massa resinacea), ad basin profundam fibulatis, interdum appendiculo brevi obtuso munitis, strato interno parietis nonnihil cyanophilo, ceterum acyanophilis, inamyloideis. **Hyphis** tramatis pilei ± radiatim dispositis, frequenter fortiter inflatis et brevi-cellulatis, aliis inter septa elongatis (> 100 μm), e. gr. 41 × 20–33 μm aut 100 × 25 μm, fibulatis sed nonnullis septis simplicibus praesentibus, inamyloideis, tenuiter vel firme tunicatis, hyalinis; in stipite subparallelis, inamyloideis sed nonnullis in superpositione debilissime pseudoamyloideis; in tramate hymenophorali regulari, haud gelatinoso eis tramatis pilei similibus, intertextis, in hymenopodio plerumque hyphis filamentosis, subparallelis, laxe dispositis praedominantibus. Hyphis oleiferis paucis, flexuosis, 3–10.5 μm. Hypharum cellulis terminalium ad aciem lamellarum aut basidiola aut intermittenter cheilocystidia efformantibus, his 30–32 × 10–11 μm, vix projectentibus, ventricosis, obtusissimis, tenuiter vel firme tunicatis, intus pigmento pallide fuscido, vacuolari impletis vel frequentius omnino hyalinis. **Epicute pilei** hymeniformi, rarius hic inde epitheliali-bistrata, ex elementis 23–53 × 10.5–33 μm, subvesiculosis vel vesiculosis, vix pedicellatis, paucis hyalinis, plerumque pigmento fusco vel saturate spadiceo dissoluto vel colloidaliter condensato repletis efformata; inter ea dermatocystidiis in parte marginali pilei satis numerosis, ad centrum numerosissimis, 45–90 × 10–24(–32) μm, ventricosis, utrifirmibus, ampullaceis (collo brevi), pariete plerumque 0.2–0.5, rarius usque ad 1 μm crassa

instructis, hyalinis vel pigmento fusco vacuolari impletis, interdum minute mucronatis et obtusis vel subacutis, ceterum plerumque obtusis. Tegumento stipitis e dermatocystidiis numerosis efformato, his 20–80 × 4.5–12 μm, dermatocystidiis pilei similibus sed hyalinis, frequenter angustioribus nonnullis cylindraceis vel flexuosis, pariete 0.4–1 μm crassa.

Ad lignum in silva tropicali.

TYPUS—Brazil, Amazonas, road Manaus-Caracará, km 60, 15 IX 1978, leg. *M. Freitas da Silva*, *Singer B 11390* (INPA).

This species as well as *M. marasmioides* (Sing.) Sing. differ from *M. dauliporpus* Sing. and *M. calhouniae* Sing. in the presence of conspicuous hymenial metuloids.

Marasmius maasii Sing., spec. nov.

Pileo atrogriseo (“bear” dein “bison” M&P), glabro, non viscido, subsulcato vel sulcato, convexo, umbilicato, 17–27 mm lato. **Lamellis** pallidissime griseis, dein pallide cremeo-griseolis, satis angustis vel mediocriter latis, mediocriter densis vel subdistantibus, intervenosis, arcuatis, attingentibus-subdecurrentibus. **Stipite** pallidissime cinereo, subtiliter sericeo-pruinato ad apicem, cavo, subaequali, haud radicante, 32–43 × ± 3 mm. Mycelio basali praesente sed sparso. **Carne** subpallida vel subconcolori pilei et stipitis superficiebus, tenui, inodora.

Sporis 7–7.5 × 4.5–4.8 μm, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 29–33 × 6–7.5 μm, tetrasporis; basidiolis subfusoideis-filamentosis vel fusoideis. Cystidiis nullis. Cheilocystidiis numerosis ad aciem lamellarum heteromorpham, 18–43 × 8.5–15 μm, late ventricosis vel subvesiculosis, pedicellatis, late rotundatis, hyalinis. **Hyphis** fibulatis, inamyloideis, tenuiter vel firme tunicatis, in tramate hymenophorali regulari distanter septatis et latis (20 μm) sed nonnullis filamentosis angustis (2.5–3 μm diam.) praesentibus, in KOH subvitreis sed haud gelatinosis; in stipite subparallelis, in KOH hyalinis. Hyphis oleiferis 3.5–6.2 μm latis. **Epicute pilei** hymeniformi, ex elementis 19–43 × 7.5–17 μm late ventricosis vel subvesiculosis, pigmento dissoluto cinereo vacuolari repletis sed pariete tenui hyalina instructis, nonnullis omnino hyalinis efformata; dermatocystidiis differentiatas nullis in pilei superficie. Hypodermio subirregulari, ex hyphis filamentosis

et inflatis, pigmento elementorum epicutis repletis sed demum e pigmento granulato solido interno variegatis nec non pigmento simili granuloso-incrustatis efformato. Tegumento stipitis ex elementis eis epicutis pilei simillimis et dermatocystidiis cheilocystidiis simillimis efformato, sed his illisque pigmento minus visibili (KOH) gaudentibus.

Ad lignum putrescens arborum dicotyledonearum in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Itacoatiara, km 65, leg. *Maas, Singer B 10179* (INPA).

Gloiocephala culmicola Sing., spec. nov.

Pileo aurantiaco, macroscopice glabro, levi, convexo, dein applanato, 1–1.2 mm lato. **Lamellis** nullis, una vel duabus venis praesentibus in maturis, superficie hymeniali aurantiaca. **Stipite** brunneo-rubro, piloso, aequali, insititio, fortiter excentrico, 1.5×0.15 mm.

Sporis 11–13 \times 3.3–4.2 μm , fusoides, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis 22–28 \times 7.5–9 μm , tetrasporis; basidiolis fusoides vel subfusoides. Cystidiis ad marginem pilei tantum et secundum venas sat numerosis, ceterum rarissimis, 22–54 \times 6–11.5 μm , ventricosis vel fusoides sed fortiter constrictis sub capitulum 3.3–8 μm diam., pariete tenui vel firma rarius subcrassiuscula (0.2–0.3, rarius usque ad 0.5 μm crassa), ad apicem incrustatione resinacea succineo-mellea obtectis, inamyloideis. **Hyphis** pilei tramatis filamentosis, tenuitunicatis, fibulatis, inamyloideis; stipitis parallelis, firme vel crasse tunicatis, aurantiaco-ochraceis. **Epicute pilei** hymeniformi ex elementis integris, vesiculosis, 16–21 \times 11–12 μm , hyalinis, tenuitunicatis et inamyloideis nec non dermatocystidiis 14.8–22 \times 8–11 μm , ventricosis vel subvesiculosis et mucronatis vel bi-mucronatis, hyalinis, ad basin tenuitunicatis, superne crassiuscule tunicatis et frequenter aurantio-alutaceis, sparsis efformata; inter hac elementa et dermatocystidia pilis typi *Crinipellium* emergentibus, e. gr. 105 \times 6 μm , crassitunicatis (pariete \pm 1.5 μm diam.), strato parietis interno amyloideo (haud pseudoamyloideo), sed omnino hyalinis in KOH et NH_4OH , subulatis vel fusoides, apice obtusatis vel acutis. Tegumento stipitis e setis densis, 16–64 \times 4.5–6.5 μm , auratio-ochraceis, crassitunicatis (pariete 1–1.3 μm diam.) acutis efformato.

Ad culmos graminis emortuos.

TYPUS—Ecuador, Pastaza, near road Ambato-Puyo, 2 km from Puyo, 4000 feet alt., 24 VII 1975, *Dumont EC 1424* (NY).

This is a species of sect. *Gloiocephala*, subsect. *Macrospora*; it is related to *G. palmarum* Sing. but differs in narrower spores and metuloid hairs in the epicutis of the pileus and the stipe which are somewhat different from those of *G. palmarum*. The habitat of the two species is likewise different.

Crinipellis galeropsidoides Sing., spec. nov.

Pileo intra elevationem concentricam centram atrobunneo spinoso, marginem versus albo et sparse fulvo-stramineo spinuloso, superficie pilis exceptis siccando salmoneo-roseo (3 G 11 vel “crab apple” M&P), spinulis e pilis agglutinatis efformatis in centro densissimis, marginem versus et in elevatione sparsis, sicco, ovato vel ellipsoideo vel oblongo, dein campanulato, margine primum stipitis apici adhaerente, dein stricto et pectinato, elevatione concentrica centrali in vegetis haud manifesta sed siccando notata ornato, 2–5 mm lato et 5–9 mm alto. **Lamellis** albidis, dein brunneol-albidis, siccando roseolis, ascendentibus, confertis, angustis, aciem versus vix tenuioribus quam carnem pilei versus, subliberis. **Stipite** ad basin brunneo, apicem versus gradatim albido vel stramineo-brunneolo, in zona primum pileo obtecta subtiliter piloso, basin versus fortiter lanato-piloso et interdum longitudinaliter costato, farcto, dein cavo, insititio, stricto vel flexuoso, apicem versus gradatim attenuato, 39–93 \times 0.7–1 mm. **Carne** albida, tenui, inodora.

Sporis 8–12 \times 4–5.8 μm , demum nonnullis usque ad 16.5 \times 6.5 μm et septatis, hyalinis vel pallide stramineis in KOH, inamyloideis, levibus, ellipsoideis vel frequentius oblongis. **Hymenio:** Basidiis 18–24 \times 7–10 μm , 2–4-sporis; basidiolis fusoides. Cystidiis 28–37 \times 9.5–10 μm , fusoides, obtusis, nonnullis excrescentio longo apicali, filiformi praevisis, tenuitunicatis, frequenter incrustatione resinacea hyalina instructis. Cheilocystidiis quam pleurocystidiis magis versiformibus, 27–39 \times 6–9 μm , saepe utrififormibus vel utrififormisubcapitatis vel ampullaceis, fusoides, densis vel confertissimis, hyalinis vel brunneolo-hyalinis, nonnullis appendiculo sterigmatoide apicali, rarissime, 2–3 appendiculis apicalibus ornatis, ceterum obtusis. **Hyphis** tramatis hymenophoralis

regularis parallelis vel subparallelis, hyalinis, haud gelatinosis, tenuitunicatis, 4–5 μm latis vel interdum usque ad 19 μm inflatis, inamyloideis, fibulatis. Pilis **pilei epicutem** formantibus, 110–469 \times 4–7.5(–9) μm , ad apicem acutissimis vel attenuato-subacutis vel rotundato-obtusis, raro lobato-furcatis, haud septatis vel septis simplicibus scalformiter approximatis instructis, pariete 0.5–3 μm crassa, pseudoamyloidea, in NH_4OH brunnea tunicatis, in centro pilei interdum usque ad 600 μm longis. Hypotrichio e catenulis cellularum hyphalium parallelarum efformatis, septis simplicibus vel fibulatis separatis cellulis e. gr. 32 μm longis et 6–32 μm latis, pariete firma, inamyloidea vel lenissime pseudoamyloidea, cellulis terminalibus interdum haud in pila continuatis sed superficiem subhymenialefformatibus. Pilis stipitis similibus eis pilei sed ad apicem stipitis subbrevioribus et subpallidioribus. KOH ope superficie sicca, pilei basali albicante, pilis obscuriscentibus, nullo modo virescentibus.

Ad folia Leguminosarum delapsa in silva arenosa typi campinarana gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 20 XII 1977, leg. *I. Araujo Aguiar, Singer B 10380* (INPA).

This is a species of sect. *Crinipellis* subsect. *Heteromorphinae*. It is remarkable because of its habit and the pink colors it shows when dried.

Crinipellis hygrocyboides (Henn.) Sing., comb. nov.

BASIONYM—*Marasmius hygrocyboides* Henn., Engler's Bot. Jahrb. 30: 47. 1901.

The type is a species of sect. *Ionopodinae*.

Crinipellis sinensis Sing., spec. nov.

Pileo centro nudo pilisque pilei frequentius acutis et latoribus a *C. commixta* Sing. differt. Ad Bambusam.

TYPUS—China, Yunnan, inter "Yungbei" et "Tschuhsiung (Tsuyung)" infra oppidum "Be-yendjing," in regione subtropicali, 1550 m alt., 13 V 1915, *Handel-Mazzetti, Iter sinense 1914–1918 no. 6298* (WU).

The type of *C. sinensis* Sing. as well as a collection of *C. corticalis* (Desm.) Sing. (Hunan, April

1919, leg. *Wang-Te-Hui, Handel-Mazzetti 28*) were identified by Bresadola as *Collybia zonata* Peck, but neither of them is identical with *Crinipellis zonata* (Peck) Pat.

Chaetocalathus eurysporus Sing., spec. nov.

Pileo dilute coriicolore, sicco pallide ochraceo, piloso, sulcato, 1.5 mm lato vel paullum latiore. **Lamellis** laete aurantio-brunneis, sat distantibus, sat latis, aciebus subobtusis, concurrenti-liberis. **Stipite**, rudimento stipitis, pseudostipite nullis. **Carne** tenui.

Sporis 8.2–10 \times 6.5–9 μm , eis *C. liliputiani* similis. **Hymenio**: Basidiis 17–31 \times 8–11 μm , tetrasporis, nonnullis subcrassitunicatis. Cystidiis nullis. Cheilocystidiis ad aciem lamellarum heteromorpham 16–50 \times 4–10 μm , aut vesiculosos vel clavatis aut cylindraceis, nonnumquam constrictis, nonnullis ad basin incrassatis, integris vel appendiculatis (appendiculis uno vel septem, (2–)8–18.5 \times 2 μm erectis), aut tenuiter aut firme, haud crasse tunicatis, hyalinis, inamyloideis vel superpositione lenissime pseudoamyloideis. **Hyphis** pilei hyalinis, filamentosis, irregulariter intertextis, inamyloideis, haud gelatinosis, fibulatis. **Epicute pilei** ex pilis 80–235 \times 3–4 μm efformata; pilis apice rotundato-obtusos vel subacutos et pariete lente manifeste pseudoamyloidea, 1.2–1.5 μm crassa, haud vel vix incrustata instructis, septis secundariis nullis. Hypotrichio ex hyphis diametro pilis aequalibus sed pariete 0.5 μm tantum crassa instructis, septatis, inamyloideis, hyalinis efformato.

Ad ramulum emortuum in cortice.

TYPUS—Panamá, Panamá, prope Altos de Pacora, 2100–2200 ft., 30 VI 1975, leg. *Dumont, Carpenter & Mori, Dumont P 1540* (NY).

Hemimycena amazonica Sing., spec. nov.

Pileo albo, sicco subgilvo, primum levi, demum radiatim sulcato, sicco, glabro, convexo, umbonato, 2.5 mm lato. **Lamellis** albis, mediocriter distantibus et latis, haud intervenosis, adnatis. **Stipite** albo, siccando leniter gilvescente ad apicem et brunnescente ad basin, subglabro, sicco, aequali sed basi lenissime subbulbosa, centrali, frequenter curvato, 3.5 \times 0.2, ad basin 0.3 mm. Mycelio basali persistenter albo, sericeo-fibrilloso, radiante, interdum leniter in stipite ascendente. **Carne** tenui, alba, immutabili, inodora.

Sporis $6.5 \times 3\text{--}3.2 \mu\text{m}$, oblongis (haud fusoideo-ventricosis), levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $13\text{--}18.5 \times 5\text{--}6.5 \mu\text{m}$; tetrasporis; basidiolis haud fusoideis. Cystidiis nullis. Cheilocystidiis admodum inconspicuis, hyphoidibus vel apice claviformibus, subtiliter denseque diverticulatis, hyalinis, tenuitunicatis, usque ad $19 \times 3.5 \mu\text{m}$; marginem pilei versus altero typo irregulari, versiformi, haud diverticulato praesente. **Hyphis** filamentosis sed nonnullis inflatis, fibulatis, haud gelatinosis, inamyloideis, in tramate hymenophorali regulariter dispositis, in stipite subparallelis, azurei cresylici ope orthochromaticis, densis, firme tunicatis (pariete $\pm 0.3 \mu\text{m}$ crassa), $2.5\text{--}10 \mu\text{m}$ diam. **Epicute pilei** ex hyphis appressis vel apice subsascentibus, diverticulatis (diverticulis usque ad $1.7 \mu\text{m}$ altis) efformata. Tegumento stipitis ad apicem eius ex cellulis terminalibus hypharum ascendentium $\pm 11\text{--}19\text{--}(30) \times 5\text{--}6\text{--}(7) \mu\text{m}$, breviter cylindraceutis, firme tunicatis, hyalinis efformato; his ad basin stipitis $25\text{--}100 \times 0.5\text{--}2.5 \mu\text{m}$, filamentosis, tenuitunicatis, levibus, nonnumquam furcatis mycelialibus.

Ad lignum dicotyledoneum in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 IV 1978, *Singer B 10887* (INPA).

Hemimycena diplocystis Sing., spec. nov.

Pileo albo, sicco, sub lente pilis longis sparsis ornato, ad marginem sulcato, convexo, papilla centrali, alta, tenui ornato, 1.2 mm lato. **Lamellis** albis mediocriter distantibus et latis, omnibus marginem pilei attingentibus, adnatis dente subdecurrente. **Stipite** albo, piloso pilis longis strictis, sicco, aequali, $9 \times 0.1\text{--}0.2$ mm; mycelio basali albo, fibrilloso. **Carne** tenuissima, alba, immutabili, inodora.

Sporis $6\text{--}9.5 \times 1.5\text{--}2.5 \mu\text{m}$, plerumque $2\text{--}2.2 \mu\text{m}$ latis, fusoideis vel subcylindraceutis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $10\text{--}14 \times 3\text{--}5.5 \mu\text{m}$, 2-4-sporis (plerumque tetrasporis). Cystidiis nullis. Cheilocystidiis $26\text{--}37 \times 6.5\text{--}11.8 \mu\text{m}$, deorsum ventricosus, gradatim attenuatis apicem obtusum versus vel ampullaceis (apice $2.5\text{--}6 \mu\text{m}$ diam.), dispersis sed sat numerosis, hyalinis; marginem pilei versus etiam elementis cystidiformibus dermatocystidiis epicutis simillimis et typi Rotalis modo diverticulatis. **Hyphis** in tramate hymenophorali regulari hyalinis, fibulatis, tenui-

tunicatis, multis moderatim inflatis, cellulis sat longiusculis, inamyloideis, fibulatis. **Epicute pilei** cutiformi, hyphis supernis unilateraliter diverticulatis (diverticulis sat longis et tenuibus), hyalinis, $1\text{--}8 \mu\text{m}$ latis, haud gelatinosis, ex eis dermatocystidiis et pilis erectis natis, illis $13\text{--}23 \times 7\text{--}12 \mu\text{m}$, late ventricosus vel subvesiculosus-saccatis, dense typi Rotalis modo diverticulatis, diverticulis $1\text{--}2 \mu\text{m}$ longis; his (pilis) longis (e. gr. $43 \times 2.5 \mu\text{m}$ ad basin frequenter dilatatis), filiformibus vel apice subclaviformi, tenuitunicatis, hyalinis. In tegumento stipitis pilis simillimis praesentibus.

Ad folia coriacea dicotyledonea delapsa in silva arenosa tropicali typi campinarana solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracarái, km 45, 10 VIII 1978, *Singer B 11365* (INPA).

Hemimycena mauretana (Maire) Sing. and *Mycena albicolor* Smith are related, but our new species can be distinguished by narrow spores and very small carpophores.

Hemimycena guanacastensis Sing., spec. nov.

Pileo albo, sub lente pubescente, sicco, levi vel sulcato, margine nonnumquam leniter incurvato, campanulato vel subconico, dein convexo vel semiglobato, obtuso vel papillato, $1\text{--}2$ mm lato. **Lamellis** albis, primum subvenosis, dein angustis, subdistantibus vel distantibus, primum haud omnibus ad marginem percurrentibus, arcuato-subsascentibus, adnatis, dein arcuato-decurrentibus. **Stipite** albo, sicco, insititio vel haud insititio, pubescente ex toto, subaequali vel apicem versus subattenuato, saepe curvato, $4.5\text{--}6 \times 0.1\text{--}0.2$ mm; mycelio basali subnullo vel sericeo-fibrilloso sed breviter radiante. **Carne** tenuissima, alba, immutabili, inodora.

Sporis $4\text{--}7 \times 2.5\text{--}3.5 \mu\text{m}$, ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio:** Basidiis $18\text{--}25 \times 4.3\text{--}4.5 \mu\text{m}$, 1-4-sporis, plerumque tetrasporis. Cystidiis nullis. Cheilocystidiis dermatocystidiis piliformibus simillimis. **Hyphis** in tramate hymenophorali hyalina, regulari haud gelatinosis, multis inflatis inter septa distantia vel conferta, fibulatis, in tramate pilei similaribus, omnibus inamyloideis; in stipite parallelis, elongatis, $\pm 4 \mu\text{m}$ latis, minime pseudoamyloideis aliis inamyloideis

intermixtis. **Epicute pilei** ex hyphis cutiformiter dispositis, ad superficiem diverticulatis vel verrucosis (diverticulis 1–1.2(–1.5) μm altis), filamentosis vel fusiformibus et incrassatis efformata et dermatocystidiis piliformibus usque ad $35 \times 3.5 \mu\text{m}$ versiformibus, tenuitunicatis obsita. Tegumento stipitis e dermatocystidiis piliformibus numerosis sed haud densis efformato, his 10–63 \times 3–6 μm , gradatim longioribus basin stipitis versus, apice obtusis, integris, versiformibus, saepe filamentosis basi dilatatis vel anguste ampullaceis, rarius anguste ventricosis, omnibus unicellularibus, hyalinis, inamyloideis, tenuitunicatis.

Ad folia coriacea dicotyledonea delapsa in silva tropicali quercubus dominata gregatim.

TYPUS—Costa Rica, Guanacaste, Parque Nacional de Santa Rosa, 25 VII 1981, *Singer B 12464* (F).

Hemimycena guanacastensis is close to *H. diplocystis* Sing. and *H. mauretanic* (Maire) Sing.

Hemimycena pleurotiformis Sing., spec. nov.

Pileo albo, pallide subalutaceo in centro, subhygrophano, macroscopice glabro, sub lente subtiliter pubescente, levi, sicco, convexo, obtuso, 13 mm lato. **Lamellis** albis, angustis, confertissimis, ± 0.5 mm latis, sub lente subtiliter fimbriatis, subsinuato-decurrentibus vel adnato-decurrentibus. **Stipite** subalutaceo-albo, pubescente, sicco, excentrico, curvato, ad apicem attenuato, ± 8 mm alto, 1.3 mm lato ad apicem, 2 mm lato ad basin; mycelio basali subvelutino, parco, albo. **Carne** alba, inodora.

Sporis 6.3–7 \times 3.3–4.4 μm , ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 17–17.5 \times 4.3–7 μm , tetrasporis; basidiolis haud fusoides. Cystidiis numerosissimis, $\pm 25 \times 8.5 \mu\text{m}$, fusoides vel fusideo-mucronatis mucrone angusto, subacuto 1.5–2 μm lato), inamyloideis, haud crasse tunicatis. Cheilocystidiis 32–44 \times 5–5.5 μm , sub apice subcapitato vel late clavato 4.7–8.8 μm diam. constrictis (constrictione 3–3.5 μm diam.) et sub constrictione ventricosis, hyalinis, tenuitunicatis, capitulo vel clavula superiore dense diverticulato diverticulis 0.8–2.5 μm altis. **Hyphis** hyalinis, inamyloideis, haud gelatinosis, fibulatis, inamyloideis; tramate hymenophorali regulari. **Epicute pilei** ex elementis hyphalibus efformata et dermatocystidiis obsita; his cheilocystidiis simillimis sed magis

variabilibus dimensionibus. Tegumento stipitis e dermatocystidiis eis pilei simillimis efformato.

Ad lignum emortuum dicotyledoneum in silva tropicali pluviali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 VI 1977, *Singer B 9911* (INPA).

This species may be compared with *H. anomala* Dennis which is smaller and lacks the very numerous cheilocystidia characteristic for *H. pleurotiformis*.

Mycena agloea Sing., spec. nov.

Pileo albido, demum griseo-albido, debiliter sulcato, convexo, obtuso, 6 mm lato. **Lamellis** albidis, interdum leniter cinerascens, haud intervernosus, 13 percurrentibus, tridymis, collariatis. **Stipite** pileo concolori, partim hyalino-piloso, e disco dilatato in vegetis manifeste costato nato, filiformi, 21 \times 0.2 mm. **Carne** tenuissima, inodora.

Sporis 8.5–10 \times 5–5.5 μm , ellipsoideis, nonnullis amygdaliformibus, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 18 \times 10 μm , tetrasporis; basidiolis subvesiculosus, nonnullis debiliter pseudoamyloideis. Cystidiis admodum raris et sparsis, 17 \times 14.5 μm , levibus, saccatis. Cheilocystidiis 12–19 \times 7.5–11 μm , clavatis vel subvesiculosus vel ventricosis, tenuitunicatis, hyalinis, diverticulis sat numerosis plerumque apicalibus sed divergentibus, usque ad 6 μm longis, tenuibus ornatis. **Hyphis** omnibus haud gelatinosis, hyalinis in KOH, pseudoamyloideis, cellulis voluminosis, brevibus, e. gr. 38 \times 27 μm , fibulatis. Tramate hymenophorali regulari et subhymenio pseudoamyloideis. **Epicute pilei** cutiformi, ex hyphis filamentosis, hyalinis, ad superficiem nodulosis et diverticulatis efformata. Hypodermio a tramate pilei vix differentiato. Tegumento stipitis ex hyphis longis, prope basin septatis, apicem acutum vel obtusum versus attenuatis, hyalinis, levibus, 30–82 \times 0.5–3.5 μm efformato, nonnullis ex eis ramosis, omnibus tenuitunicatis.

Ad folia coriacea dicotyledonea delapsa in silva arenosa tropicali typi campinarana.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 25 VII 1977, *Singer B 10124* (INPA).

This species is related to *M. mucor* (Batsch ex Fr.) Gillet which, at least the form described from Europe by Kühner, is certainly different.

Mycena castaneomarginata Sing., spec. nov.

Pileo aetate vel siccando atrobrunneo, centro fuligineo, glabro, convexo, centro applanato, mox umbilicato, 2–2.5 mm lato. **Lamellis** sordide buxco-flavis, acie castaneis, horizontalibus, mediocriter latis vel sat latis, mediocriter distantibus, adnatis. **Stipite** pileo concolori, levi, glabro, haud glutinoso, 11–12 × 0.1–0.2 mm. Mycelio basali fibrilloso-strigoso, concolori. **Carne** tenui.

Sporis 6.5–7.5 × 4–4.5 μm, inamyloideis vel partim lenissime amyloideis, levibus, ellipsoideis. **Hymenio**: Basidiis 22–23 × 6–7.5 μm tetrasporis. Cystidiis nullis. Cheilocystidiis numerosis, 17–32(–50) × 5.5–8(–10) μm, versiformibus, frequenter fusoides, ampullaceis, clavatis, utrififormibus, appendiculo nullo, vel uno rosariiformi vel uno, duobus, tribus appendiculis digitiformibus apicalibus, obtusis, pigmento dissoluto intracellulari fulvidulo vel rubello-brunneo repletis. **Hyphis** tramatis filamentosis et plurimis latis (11–12 μm) sed septis neque densis (nec cellulis voluminosis) neque distantibus (ita ut in sarcodimiticis), manifeste pseudoamyloideis, fibulatis, fulvidulis, haud gelatinosis. **Epicute pilei** cutiformi, ex hyphis fortiter sed saepe irregulariter diverticulatis, 2 μm crassis, pallide fuscidulis vel pallide castaneis, diverticulis supernis tantum, hyalinis 6 × 1 μm; epicute haud pseudoamyloidea.

Ad folium dicotyledoneum delapsum in silva tropicali amazonica arenosa typi campinarana solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 6 XI 1977, leg. *Ermelinda Freire, Singer B 10268* (INPA).

This species differs in many characters from taxa already described in *Mycena*, but unfortunately it is solitary and rare, fruiting in the drier season. For this reason a few data on young, moist carpophores and a full understanding of the variability of *M. castaneomarginata* are still wanting.

Mycena castaneostipitata Sing., spec. nov.

Pileo sordide violaceobrunneo, in centro et ad marginem pallidiore, sub lente pruinato, radiatim

virgato et per quatuor quintas radii sulcato, subpectinato, haud viscido, centro subvenuloso, primum conico et alte papillato, dein convexo et circum papillam moderatim altam applanato, 8–9 mm lato. **Lamellis** pallidis, acie pileo concolori et subtiliter crenulatis, subdistantibus, didymis, sub lente brunneo-punctatis, debiliter (i.e., haud alte) intervenosis, percurrentibus marginem versus angustis, ceterum satis angustis vel mediocriter latis, adnexis vel subcollariatis. **Stipite** pileo concolori, levi et glabro, aequali sed ad basin saepe dilatato, 4–5 × 0.5–1 mm, ad basin usque ad 1.5 mm diam. Mycelio basali piloso-strigoso, hyalino vel brunneo. **Carne** tenui, inodora.

Sporis (5.8–)7–8 × (4.5–)5–6.5 μm, breviter ellipsoideis (Q = 1.2–1.5), levibus, hyalinis, inamyloideis, nonnullis autem lenissime amyloideis. **Hymenio**: Basidiis 24 × 8 μm, tetrasporis. Cystidiis ad latera et aciem lamellarum sat numerosis, dimorphis, (1) 27–48 × 8–12 μm, integris, ventricosis vel subclavatis, paucis leniter constrictis, frequenter pallide melleo-incrustatis, haud pseudoamyloideis sed ioidi ope sepiaceo-granulosis in succo hyalino, rotundato-obtusis apice; (2) 25–30 × 3–5 μm, sed ad apicem usque ad 3.5–8.5 μm diam. appendiculis apicalibus et subapicalibus divergentibus clavatis vel subvesiculosus causa (appendiculis 5.5–8 × 2–5 μm), clavatis vel subcylindraceis, ex integro lamina resinacea melleo-straminea incrustatis sed pariete propria tenui et hyalina. **Hyphis** e cellulis *Mycenae* typicae modo voluminosis catenulatis efformatis, manifeste pseudoamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** cutiformi, ± 20 μm alta, ex hyphis filamentosis haud densis sed vix visibiliter gelatinisatis (KOH), superne conspicue diverticulatis, diverticulis cystidiorum typi secundi appendiculis similibus sed usque ad 15 × 3–3.5 μm, hyalinis, inamyloideis, hyphis sine diverticulis 2.5–3 μm diam.

Ad lignum in silva tropicali-montana gregatim.

TYPUS—Costa Rica, Alajuela, Alto Berlin, 26 VII 1981, *Singer B 12493* (F).

This is a remarkable, rather striking species, related to the preceding one.

Mycena cnaphocystis Sing., spec. nov.

Pileo fuscidulo-griseo in sulcis vel striolis, ceterum pallidiore vel pallido, glabro, haud viscoso, convexo, obtuso, demum saepe centro depresso,

5–6 mm lato. **Lamellis** albis vel pallidis, interdum demum subgriseis, acie concolori integra notatis, latis vel stipitem versus latissimis, subdistantibus, rarius distantibus, arcuatis, adnatis, rarius subdecurrentibus. **Stipite** albo, haud glutinoso, glaberrimo, subnitente, cavo, filamentoso, aequali, 25–45 × 0.1 mm. Mycelio basali albo, fibrilloso. **Carne** inodora.

Sporis 4.5–7.5 × 2.3–3.5 μm, plerumque 5.5–6 × 2.5–3.5 μm, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis, contentu demum subflavescente (KOH). **Hymenio:** Basidiis 13–15.5 × 4–6.5 μm, tetrasporis. Cystidiis 15–28 × 5–12 μm, ampullaceis vel utrififormibus, ad apicem tenuitunicatis, ceterum crassitunicatis (pariete hic 1–1.2 μm diam. et debiliter pseudoamyloidea in nonnullis, inamyloidea in aliis), obtusis, per tres quartas partes superiores diverticulis ad apicem longioribus, basin versus brevioribus obsitis, diverticulis tenuibus vel crassiusculis, 0.5–6 μm longis. Cheilocystidiis 19–37 × 5–15 μm, plerumque 24–48 × 6–12 μm, ventricosis vel late fusioideis vel saccatis, typi Rotalis modo ex integro paene subtiliter diverticulatis (diverticulis 0.5–2 μm longis, tenuibus), hyalinis, tenuitunicatis. **Hyphis** typi Mycenae typicae, pseudoamyloideis, fibulatis. **Epicute pilei** cutiformi, hyphis supernis dense sed haud alte diverticulatis, diverticulis obtusis, usque ad 1 μm altis, Hypodermio cutiformi, ex hyphis pigmentatis, latis, septis proximis divisis efformato; pigmento vacuolari, griseofusco.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 15 XII 1977, *Singer B 10317* (INPA). Additional collection: same locality, 15 XII 1977, *Singer B 10325* (INPA).

Mycena delica Sing., spec. nov.

Pileo griseo, sed inter strias et in centro saepe pallidiore vel pallido, interdum saturate fusco-griseo et marginem versus murino vel murino et marginem versus pallidiore (e. gr. “goat” M&P), sulcato vel striato ad marginem interdum subpectinato, glabro, haud viscoso, convexo, obtuso vel subumbonato vel fortiter umbonato, rarius centro leniter depresso, 10–17.5 mm lato. **Lamellis** albis vel grisellis vel cremeis (“champagne” M&P), subdistantibus, rarius mediocriter distantibus vel distantibus, haud intervenosis vel intervenosis, latis, rarius angustis, primum subsascen-

dentibus, rotundato- vel arcuato-adnatis, rarius adnexis. **Stipite** pallide griseo vel ad apicem albido, basin versus frequenter fusco vel griseo (e. gr. “Madrid” M&P), macroscopice glabro, sub lente ± subtiliter pruinato, glabrescente, aequali, cavo, 12–48 × 0.6–1.8 mm. Mycelio basali albo vel sordide albido. **Carne** tenui, in stipite succosa sed latice haud observato; odore nullo.

Sporis 6.5–10.5 × 4–6.5 μm, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 22–35 × 7–8.8 μm, tetrasporis. Cystidiis nullis, sed pseudocystidiis ad latera et aciem lamellarum numerosis, 15–50 × 5–10.5(–16) μm, versiformibus, frequenter fusioideis vel ventricosis vel ampullaceis, rarius, praesertim ad latera lamellarum late clavatis, plerumque mucronatis, raro apice bifurcatis, acutis vel obtusis, interdum resinaceo-incrustatis, contentu granuloso hyalino vel melleo vel flavobrunneo, lipoideo(?) repletis. Cheilocystidiis ad aciem et prope aciem heteromorpham numerosis plerumque fusioideis, 30–50 × 6.5–12 μm, contentu visibili destitutis. **Hyphis** typi Mycenarum communis, pseudoamyloideis, fibulatis, haud gelatinosis. Hyphis oleiferis (laticiferis?) irregularibus, moderatim numerosis, contentu ei pseudocystidiorum simillimo repletis. **Epicute pilei** tenuiter cutiformi, ex hyphis filamentosis, ad superficiem diverticulatis vel rugosis, diverticulis sat numerosis sed irregulariter dispositis, inamyloideis, obtusis, unilateralibus obsitis, 1.7–4.3 μm diam., hyalinis, strictis vel flexuosis efformata. Hypodermio cutiformi, tenui, hyalino, ex hyphis Mycenarum modo voluminosis efformato. Strato subhypodermiali ab hypodermio differt praesentia pigmenti vacuolaris sepiacei vel fusci. Interdum hoc stratum cum hyphis hypodermii intermixtum et hoc modo hypodermium et stratum subhypodermiale vix discernibilia sunt. Tegumento stipitis subnullo, sed zona gelatinosa semper destituto et frequenter hyphis filamentosis nodoso-diverticulatis stratum externum interdum ascendens formante quod pruina fugacem constituit.

Ad folia et stipulas minores Dicotyledonum delapsas in silvis et plantationibus tropicalibus.

TYPUS—Brazil, Bahia, Itabuna, in a plantation of *Theobroma cacao*, 7 VI 1978, *Singer B 11121* (INPA). Additional collections: in Amazonia, 30 km N of Manaus, in May and June, *Singer B 9622*, 9665, 10029 (INPA).

Mycena erubescens Hoehn. is somewhat related; *M. frondaria* Metrod should be compared.

Mycena depilata Sing., spec. nov.

Pileo albo, sicco, pruinato, campanulato vel convexo, obtuso, 1 mm lato. **Lamellis** albis, distantibus, mediocriter latis, subliferis. **Stipite** albo, subglabro, sicco, filamentoso, usque ad 10 mm longo, 0.05–0.1 mm diam. Mycelio basali infra circulum angustissimum tenuissimo, haud striatum nec costatum discum formante, albo, sub lente tantum visibili et macroscopice stipitem insititum aemulante. **Carne** in pileo subnulla, in stipite alba, marcescente.

Sporis 6.2–9.5 × 3.5–5.7 μm, plerumque 7–7.5 × 4–4.3 μm, debiliter amyloideis. **Hymenio**: Basidiis 12–14 × 8–8.5 μm, vesiculosis, tetrasporis. Cystidiis nullis sed cheilocystidiis ad et prope aciem lamellarum moderatim numerosis, 10–20 × 6–8 μm, typi *Rotalis* modo diverticulatis, ventricosis, tenuitunicatis, hyalinis. **Hyphis** typi Myenarum inflatis, pseudoamyloideis, in pileo perpauca, in stipite parallelis, fibulis hic destitutis et plerumque angustis, inter septa elongatis. Tramate hymenophorali regulari. Stratis gelatinosis nullis. **Epicute pilei** e hyphis ubique diverticulatis, filamentosis efformata et dermatocystidiis ovoideis vel globosis ex integro diverticulatis, mox liberis, 20–39 × (12–)17–24 μm, paucis cum hyphis continuis et his minoribus. Tegumento stipitis e dermatocystidiis cheilocystidiis simillimis sed 12–33 × 8.5–19 μm, late ventricosis, diverticulatis et perpauca hyphis ascendentibus levissimis efformato.

Ad fructum arboris dicotyledoneae in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus ("EMBRAPA"), 18 V 1977, *Singer B 9634* (INPA).

Mycena osmundicola Lange and *M. microstena* Sing. are related.

Mycena dumontii Sing., spec. nov.

Carpophoris pallidis, in pileo et stipite dermatocystidiis piliformibus giganteis (55–200 × 8–20 μm) cylindraceutis vel subcylindraceutis, obtusis, hyalinis, integris, levibus ornatis. **Stipite** e disco basali ei quem *M. mucor* format simili, levi nato. **Lamellis** paucis, angustis. **Sporis** 7–9 × 4–5.5 μm, amyloideis. Basidiis 15 × 6.5 μm, tetrasporis. **Hyphis** omnibus stipitis et multis pilei fortiter pseudoamyloideis, structura typica Mycenarum gaudentibus.

Ad Pteridophyta in silva tropicali-montana.

TYPUS—Colombia, Cundinamarca, between Zipaquirá and Pacho, 29 to 30 km from Zipaquirá, 10,000 ft alt., 9 VI 1976, *Dumont CO 4476* (NY).

Mycena fuscocystidiata Sing., spec. nov.

Pileo sordide purpureo, sicco atrofusco-umbri-no centro subnigro, glabro, convexo, obtuso, ± 5.5 mm lato. **Lamellis** pallidis sed acie pileo concolori, lateribus siccis sordidis, latis, subdistantibus vel mediocriter distantibus, intermixtis, decurrentibus. **Stipite** pileo concolori, glabro, aequali vel subaequali, 14 × 0.7 mm. Mycelio basali sparso, pallido vel sordido. **Carne** inodora.

Sporis 4.5–6.5(–7.5) × 3–4 μm, plerumque 6–6.5 × 3.5–4 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 14–19 × 5–6 μm, tetrasporis. Cystidiis ad latera et aciem lamellarum praesentibus, ad aciem numerosissimis et omnibus fere pigmento dissoluto fusco vacuolari repletis, ad latera frequenter hyalinis, 15–27 × 5–11 μm, versiformibus, frequenter fuscoideis, ampullaceis, clavatis, nonnullis utrififormibus, multis ventricosis, obtusis, tenuitunicatis. **Hyphis** Mycenarum constructione typica gaudentibus, pseudoamyloideis, fibulatis, interdum nonnullis filamentosis intermixtis, haud gelatinosis. **Epicute pilei** ex hyphis externis diverticulatis (diverticulis usque ad 5.5 × 1–3.4 μm) efformata, a hypodermio paullum differentiata. Hypodermio ex hyphis latis-simis et filiformibus intermixtis cutiformiter dispositis efformato, pigmento in cellulis colloideo, amorpho, fusco (in siccis, in NH₄OH).

Ad lignum emortuum Dicotyledonum in silva tropicali, pluviali.

TYPUS—Colombia, El Valle, Buenaventura, Calima, 17 IV 1968, *Singer B 6184* (F).

Mycena poecila Sing., an Amazonian species, is related.

Mycena gloeoloma Sing., spec. nov.

Pileo atrogriseo, extremo margine nonnquam pallido, sulcato, glabro, convexo, profunde umbilicato in siccis, leniter in vegetis, ± 5 mm lato. **Lamellis** albis, siccis cinereis acie albida, subdistantibus, subarcuatis, latissimis, adnatis dente subdecurrente, demum decurrentibus. **Stipite** albo, sub lente subtiliter piloso, haud viscoso, subaequali vel gradatim apicem versus attenuato,

$\pm 30 \times 0.3\text{--}1$ mm. Mycelio basali nullo viso et stipite insititio sub lente. **Carne** inodora.

Sporis $5.5\text{--}8.8 \times 3\text{--}3.5$ μm , ellipsoideis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio:** Cystidiis haud visis. Cheilocystidiis in zona aciei gelatinosa insertis, ex hyphis gelatinosis filamentosis natis, $9.5\text{--}11 \times 4.5\text{--}5$ μm , subcylindraceis vel subclavatis et typi Sicci modo setulis inamyloideis apicalibus ornatis, ceterum inamyloideis vel pseudoamyloideis, diverticulis hyalinis et ± 4 μm altis.

Hyphis Mycenarum typicarum modo inflatis, fortiter pseudoamyloideis, fibulatis, in pileo pigmento intracellulari sepiaceo imbutis, sed supra trama proprium zona alta gelatinosa (± 70 μm diam.) ex hyphis filamentosis, laxe dispositis, inamyloideis efformata evoluta. **Epicute pilei** immediate supra zonam gelatinosam tenui, ex hyphis prostratis tenuibus, supra fortiter et dense diverticulatis efformata. Tegumento stipitis supra hyphas longitudinales, haud gelatinosas, parallelas e pilis sparsis, brevibus cystidiformibus efformato, his $18\text{--}35 \times 5.5\text{--}8$ μm , hyalinis, inamyloideis, erectis, utriforibus vel e basi dilatata cylindraceis vel ventricosis (basi, ubi praesens, usque ad 14 μm diam.)

Ad petiolos foliorum dicotyledoneorum delapsorum gregatim in silvis tropicalibus pluvialibus.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 26 XII 1977, *Singer B 10407* (INPA).

The pileus seemed hairy when observed in fresh condition, but when dried, seen under binocular, no hairiness was visible.

***Mycena glutinocothurnata* Sing., spec. nov.**

Pileo albo, glabro, sicco, sulcato, convexo, umbilicato, 4–5 mm lato. **Lamellis** albis, latis, mediocriter distantibus, arcuatis, decurrentibus. **Stipite** albo, levi, glabro, strato crasso glutinoso ex integro cothurnato, aequali, $16\text{--}17 \times 0.2$ mm. Mycelio basali ex hyphis radiantibus albis efformato. **Carne** alba, tenui, haud gelatinosa, inodora.

Sporis $7\text{--}12 \times 2.3\text{--}3.5$ μm , plerumque $9.5\text{--}10 \times 3\text{--}3.5$ μm , angustis, cylindraceis vel clavato-cuneiformibus, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis $11\text{--}13 \times 4\text{--}6.5$ μm , tetrasporis. Cystidiis nullis. Cheilocystidiis e. gr. 17×6.5 μm , ventricososubclavatis vel cylindraceo-clavatis, hyalinis, tenuitunicatis. **Hyphis** Mycenarum typicarum structura gaudentibus, fibulatis, pseudoamyloideis, in pileo et tramate hymenophorali regulari haud gelatinosis. **Epicute pilei** cutiformi, ex

hyphis filiformibus, levibus vel vix diverticulatis, nonnullis cellulis hyphalibus breviter ascendentibus inconspicuis terminalibus exceptis totis prostratis, omnibus hyalinis. Superficie stipitis gelatinosa.

Ad folia dicotyledonea delapsa in silva tropicali, pluviali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 9 II 1978, *Singer B 10634* (INPA).

***Mycena gomezii* Sing., spec. nov.**

Pileo centro biso-fuscidulo, margine albido-bubalino, vel subconcolori et pallidiore, per sex septimas radii sulcato et per quartam partem radii pellucide striatulo, sicco, glabro, levi in centro, convexo, 7–14 mm lato. **Lamellis** albidis, subconfertis vel subdistantibus, angustis vel sat latis, acie concoloribus lateribus et subtiliter serrulatis, primum haud, dein laxe distanterque et subtiliter intervenosis, decurrentibus. **Stipite** albo, dein basin versus murino, macroscopice glabro, sed sub lente subtiliter pubescente, glutinoso, aequali vel basin versus attenuato, $11\text{--}19 \times 0.8\text{--}1.4$ mm. Mycelio basali abundante, albo. **Carne** alba, immutabili, inodora.

Sporis $6\text{--}9 \times 2.3\text{--}3.5$ μm , fusoideis vel anguste ventricosis apice angustatis, ad hilum saepe leniter incurvis, interdum simpliciter ellipsoideo-oblongis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis $19\text{--}22 \times 5.5\text{--}6.5$ μm , tetrasporis. Cystidiis nullis. Cheilocystidiis ad et prope aciem heteromorpham $35\text{--}53 \times 6\text{--}10$ μm , versiformibus, saepe ventricosis vel utriforibus, frequenter mucronatis, in constrictione $4.5\text{--}8$ μm diam., aliis ampullaceis apice $4\text{--}4.5$ μm diam., obtusis, haud incrustatis, tenuitunicatis, aliis subcylindraceis, omnibus hyalinis vel subhyalinis, inamyloideis, numquam crasse tunicatis. **Hyphis** tramatis hymenophorali regularis hyalinis, pseudoamyloideis, fibulatis, filamentosis cum latis intermixtis. Subhymenio apparenter subcellulari, multiseptato. **Epicute pilei** hymeniformi, ex elementis $25\text{--}44 \times 6\text{--}12$ μm cheilocystidiis simillimis efformata, haud gelatinosa. Hypodermio cutiformi, in strato superiore inamyloideo vel debiliter pseudoamyloideo, in strato inferiore fortiter pseudoamyloideo et hic ex hyphis filiformibus ($3.5\text{--}4.5$ μm diam.) nec non Mycenarum typicarum modo inflatis (cellulis e. gr. $36\text{--}50 \times 6\text{--}12$ μm) efformato, haud gelatinoso; pigmento in cellulis epicutis et hypodermii centri pilei fuscidulo, vacuolari. Teg-

umento stipitis e dermatocystidiis sparsis efformato, his dermatocystidiis pilei simillimis sed omnibus hyalinis.

Ad folia delapsa arboris dicotyledoneae (haud quercina) in Querceto tropicali-montano, gregatim.

TYPUS—Costa Rica, Cartago, El Empalme, 2300 m alt., 23 VII 1981, *Singer B 12387* (F).

Mycena irritans Horak is related, but the dermatocystidia of the pileus, strikingly elongated in this Costa Rican species, were not observed in Horak's *Mycena*.

Mycena griseoradiata Sing., spec. nov.

Pileo 2–7 mm lato, griseo, profunde pectinato, centro depresso, sub epicute tramate haud gelatinoso ab affinibus aberrante; **lamellis** albis, liberis; sporis 5–9 × 4–6 μm, amyloideis; cystidiis nullis; cheilocystidiis 16–35 × 8–13 μm, ventricosis vel fusoides, plerumque mucronatis vel apice appendiculatis (typi “Siccus”); tramatis structura Mycenarum typicarum; epicute hyphis inflatus et paucis cystidiformibus, jacentibus, appressis in parte superiore, subliberis, ex toto subtiliter diverticulatis consistente, his marginem pilei versus tantum visis; pigmento spadiceo vel fusco, vacuolari. **Stipite** albo sed prope basin interdum pileo concolori, 15–26 × 0.5–0.8 mm., haud insititio sed e disco minimo vix manifesto pubescente (e mycelio) nato. Dermatocystidiis eis pilei et cheilocystidiis simillimis, 24–39 × 8–9 μm. Odore nullo. **Sporis** in massa albis.

Ad lignum putridum interdum strato terrae obtectum in silva tropicali.

TYPUS—Costa Rica, Heredia, OTS station “La Selva,” near Puerto Viejo de Sarapiquí, 23 XII 1979, *D. J. Lodge 274* (F). Additional collections: same locality, *Singer B 15511* (F); Colombia, El Valle, Buenaventura, near Calima, 18 IV 1968, *Singer B 6218* (F).

This species appears to be close to other species of sect. *Radiatae*. Similar species of that section however have a gelatinous zone which is absent in *M. griseoradiata*. The latter has recently been re-collected in Costa Rica and Brazil (F, INPA).

Mycena griseoradiatella Sing., spec. nov.

Pileo griseo, subglabro, haud viscoso, convexo, obtuso, mox applanato centro depresso, 3 mm lato. **Lamellis** albis, confertis vel subconfertis, attenuato-subliveris. **Stipite** albo, sicco, apicem versus sparse, basin versus dense pubescente, e basi subdisciformi sed levi, angustissima, alba nato, 13 × 0.1–0.5 mm. Mycelio basali ex hyphis e basi dilatata radiantibus efformato, albo. **Carne** tenuissima, alba, immutabilis, inodora.

Sporis 6.3–7 × 3.3–4.3 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 14 × 7 μm, tetrasporis. Cystidiis nullis vel paucis, cheilocystidiis simillimis. Cheilocystidiis e basi bulbosa vel fusoides longe effilatis, usque ad 60 μm longis et 1–1.5 μm latis, bulbo basali e. gr. 15 × 6 μm, fusco vel hyalino. **Hyphis** typi Mycenarum inflatis, pseudoamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** ex dermatocystidiis in parte aggregatis subhymeniformiter, in parte dispersis, cheilocystidiis simillimis et paucis hyphis plerumque brevissime (0.5 μm) diverticulatis, repentibus efformata sed intermittente et hic inde hypodermium exponente. Hypodermium ex hyphis inflatis, immo globosis efformato, cutiformi, pigmentato, pigmento intraparietali, fuligineo vel sepiaceo. Tegumento stipitis in duabus tertiis superioribus stipitis sparse, infra dense dermatocystidiis efformato, his cheilocystidiis simillimis, ex hyphis longitudinalibus inamyloideis natis.

Ad folia dicotyledonea delapsa in silva typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 II 1978, *Singer B 10674* (INPA).

This species is related to the preceding one. It differs in a slightly smaller pileus, smaller spores, long effilate cheilo- and dermatocystidia, intraparietal pigment, and habitat on dead leaves.

Mycena hemitrichialis Sing., spec. nov.

Pileo cinereo centro pallido, albo-granuloso-flocculoso sub lente, longe sulcolato, conico-campulato, 3 mm lato. **Lamellis** albidis, angustis, ascendentibus, mediocriter distantibus, liberis vel subliveris. **Stipite** candido, longe piloso, filamentoso sicco, aequali, disco basali nullo, 27–28 ×

0.1–0.2 mm. Mycelio basali albo abundante cum pilis stipitis continuo. **Carne** tenuissima, inodora.

Sporis 6.5–8 × 4.5–5.5 μm, ellipsoideis, levibus, debiliter amyloideis, paucis inamyloideis. **Hymenio:** Basidiis 10–17 × 5.5–9.5 μm, breviter clavatis, nonnullis 1-sterigmaticis et appendiculo dactylomorfo uno apicali praeditis (germinantibus?), plerumque tetrasporis. Cystidiis nullis. Cheilocystidiis, 15–16 × 5–5.5 μm, anguste clavatis vel subfusoides, ad basin levibus, ceterum typi *Rotalis* modo diverticulatis, diverticulis 1–2 μm altis, nonnullis appendiculo dactylomorfo usque ad 18 × 2 μm, subfilamentoso, levi, apicali ornatis. **Hyphis** latis, inter septa haud longissimis, hyalinis, in tramate hymenophorali moderatim pseudoamyloideis, regulariter dispositis, fibulatis. Tramate pilei paullum evoluto; stipitis fortiter pseudoamyloideis, latis. **Epicute pilei** tenui, hyalina, ex hyphis ad latus externum diverticulatis (diverticulis brevibus, 0.5–0.9 μm) vel perpaucis levibus efformata sed strato superposito (velari?) granuloso e cellulis vesiculosis, dense breviter (0.2–0.5 μm) diverticulatis sed nonnullis levibus, 6.5–16 × 5.5–10 μm efformatis; his et hyphis epicutis inamyloideis. Hypodermio cutiformi, ex hyphis multiseptatis 5–12 μm latis efformato, his cum hyphis epicutis pigmento fusco vel sepiaceo vel pallide biso, vacuolari, dissoluto vel colloidaliter condensato repletis. Tegumento stipitis e pilis usque ad 300 μm longis, 3–10 μm latis, dense diverticulatis, acutis, lanceolatis efformato; diverticulis acutis, spiniformibus, ad apicem cellulae longioribus, ad basin brevioribus, conspicuis, pariete tenui, hyalina.

Ad folia delapsa dicotyledonea in silva tropicali pluviali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10851* (INPA).

In the neotropics several forms and microspecies of the stirps *Osmundicola* can be distinguished, and in Amazonia most of our collections are lignicolous. One of the foliicolous ones is *M. hemitrichialis*. Others may be worth distinguishing, but we refrain from publishing them until a special study of the whole stirps is finished. However, see also *M. depilata* Sing. (p. 72) and *M. microstena* Sing. (p. 81) which appear to be outstanding and sufficiently different from the various forms described under *M. alphitophora* (Berk.) Sacc. = *M. osmundiale* Lange.

Mycena hydropodoides Sing., spec. nov.

Pileo griseo, subglabro, sub lente demum sub-rivuloso, sulcato per tres quartas partes radii, convexo dein applanato, umbilicato, 11 mm lato. **Lamellis** albis, distantibus, demum leniter intervenosis, saepe furcatis, decurrentibus. **Stipite** albo, in parte inferiore sordide grisello, macroscopice glabro, aequali, 28 × 1 mm, haud insititio. **Odore** vix manifesto.

Sporis 5–7 × 2.5–3.5 μm, cylindraceis vel ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 13.5–22 × 5.5–7.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis sat numerosis, 18–19.8 × 6–6.3 μm (corpore basali), typi Sicci modo setulis apicalibus ± 5 μm longis acutis appendiculatis, hyalinis, tenuitunicatis. **Hyphis** Mycenarum typicarum modo latis praesertim prope hypodermium evolutis, cellulis minus inflatis in aliis partibus, pseudoamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** ex hyphis superne diverticulatis efformata, sed intermittente et in certis locis hyphis hypodermii expositis; ibi cellulis hypodermii superne diverticulatis. Hypodermio ex hyphis cutem formantibus, cellulis catenulatis voluminosis (e. gr. 25–30 × 18–20 μm) consistentibus, e pigmento vacuolari fuscis efformato; ubi diverticula praesunt, ± 5 μm alta sunt.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 26 XII 1977, *Singer B 10421* (INPA).

This species is close to *M. microtephra* Sing. It differs in narrower spores, and the colors of the fresh pileus and stipe.

Mycena icterinoides Sing., spec. nov.

Pileo flavo, haud viscido, glabro, levi, convexo, profunde umbilicato, ± 14 mm lato. **Lamellis** concoloribus, distantibus, sat latis, decurrentibus. **Stipite** concolori, glabro, haud viscido, aequali, haud insititio, ± 22 × 1.3 mm. **Carne** inodora.

Sporis 4.7–6.5 × 4.3–6.2 μm, globosis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 26–37 × 7 μm, tetrasporis. Cystidiis nullis sed cheilocystidiis ad et prope aciem lamellarum praesentibus, 28–45 × 5.5–21 μm, numerosis, subvesiculososis et levibus, plus minusve mucronatis, rarius late ampullaceis, tenuitunicatis, flavidulo-hyalinis, ina-

myloideis. **Hyphis** sat latis, in pileo radiatim dispositis, inamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** vix differentiata sed hyphis externis superne manifeste denseque diverticulatis, diverticulis $\pm 2.5 \mu\text{m}$ altis.

Ad lignum emortuum Dicotyledonum in silva primariae typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 11 VII 1977, *Singer B 10087* (F).

This species has the aspect of *Gerronema icterinum* Sing. but it is a true *Mycena* with amyloid spores and diverticulate epicutis-hyphae. It differs from similar species of *Mycena* in globose spores combined with yellow pileus and stipe and inamyloid hyphae.

***Mycena igapoensis* Sing., spec. nov.**

Pileo griseo margine albo vel atrogrieseo margine griseo vel pallidissimo alvellaneo, glabro, levi, haud viscoso, convexo, obtuso, in siccis centro interdum subdepresso, 1–3.5 mm lato. **Lamellis** albis vel albidis, distantibus, paucis (4–6 percurrentibus, perpauca intermixtis), angustis vel moderatim latis, arcuatis, adnatis vel adnato-subdecurrentibus. **Stipite** albo, ad basin interdum subblutescente, glabro, filiformi, 19–21 \times 0.2 mm, subsinitio. Inodora.

Sporis 6–10 \times 2.3–3.3 μm , anguste fusoides, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 16–22 \times 4.5–6.7 μm , tetrasporis vel tetrasporis et bisporis mixtis, clavatis. Cystidiis numerosis ad aciem, aequaliter numerosis vel minus numerosis ad latera lamellarum, 16–22.5 \times 2–5(–6.7) μm , forma sua basidiola Marasmiorum in mentem revocantibus, fusoides, acutis, integris, levibus, hyalinis. Cheilocystidiis semel visis differentiatis (typi Rotalis) an constantibus? **Hyphis** usque ad 15 μm latis, sed filamentosis intermixtis, in stipite parallelis, fibulatis, sed multis septis secundariis intermixtis nec non primariis interdum defibulatis, in pileo inamyloideis, in stipite nonnullis debiliter pseudoamyloideis visis, haud gelatinosis. **Epicute pilei** cutiformi, hyalina, hyphis externis manifeste denseque diverticulatis (diverticulis 1–2 μm altis). Hypodermio cutiformi, pigmento dissoluto vacuolari griseolo vel sepiceo-fuligineo repletis, interdum etiam intraparietali sed vix visibili in KOH. Tegumento stipitis subnullo, sed hyphis externis

eis epicutis pilei modo dense diverticulatis (diverticulis 1.5–11 μm altis).

Ad folia delapsa in vegetatione typi igapó.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 19 III 1980, leg. *I. Araujo Aguiar & Singer B 12035* (INPA). Additional collection: same locality, 26 III 1980, *Singer B 12066* (INPA).

The small number of lamellae, subsinitious stipe, and narrowly fusoid, inamyloid spores are characteristic.

***Mycena indica* Sing., spec. nov.**

Pileo purpureo-griseo, glabro, convexo, umbonato, usque ad 27 mm lato. **Lamellis** concoloribus, intervenosis et anastomosantibus (connectivus usque ad mediam latitudinem percurrentium), lateribus transverse venosis, subangustis, breviter decurrentibus. **Sporis** in massa candidis. **Stipite** subconcolori, glabro vel subglabro, apicem versus subattenuato vel subaequali, usque ad 75 \times 2 mm. Mycelio basali praesente. **Carne** immutabili, inodora.

Sporis 6–7 \times 3.5–4 μm , ellipsoideis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 18–24.5 \times 5.5–7 μm , tetrasporis. Cheilocystidiis ad aciem et ad latera prope aciem lamellarum sat numerosis, 20–37 \times 7–15 μm , versiformibus, plerumque ventricosis, rarius utrififormibus, subcylindraceis, subampullaceis vel mucronatis, subclavatis, hyalinis, tenuitunicatis. **Hyphis** voluminosis (cellulis usque ad 25 μm latis, multis brevibus, mycenoideis), in stipite subparallelis et usque ad 20 μm latis, septis plerumque fibulatis, parietibus fortiter pseudoamyloideis. **Epicute pilei** ex dermatocystidiis (haud hymeniformiter dispositis sed sparsioribus, e. gr. 17 \times 7.3 μm et cheilocystidiis similibus), e cute hypharum intertextarum natis efformata. Tegumento stipitis dermatocystidiis in parte media nullis vel perraris praedito.

Ad folia putrida *Quercus incanae* Roxb. et *Rhododendri arborei* Sm. in silva montana.

TYPUS—India, Simla, Tutu, 1982 m alt., 20 VIII 1979, *Atri 12* (F).

This species belongs in sect. *Purae* and is similar to *Poromyцена anastomosans* Sing. which is probably a form of *Mycena violacella* (Speng.) Sing.

***Mycena intervenosa* Sing., spec. nov.**

Pileo fusco, marginem versus subpallido, glabro, per 3 mm pellucide striato, levi, haud viscoso, convexo, centro applanato, 12 mm lato. **Lamellis** albis, sat confertis, sat angustis, in spatiis interlamellaribus pileo concoloribus, intervenosis, arcuatis, decurrentibus. **Stipite** albo, ad basin fuscidulo, sicco subflavescente, levi, glabro, aequali vel lenissime apicem versus attenuato, 13–18 × 1–1.3 mm. Mycelio basali abundante, pallido. **Carne** tenui, inodora.

Sporis (3.5–)4.3 × 2.5 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 21–22 × 4 μm, tetrasporis. Cystidiis ad aciem lamellarum numerosis, ad latera minus numerosis, 17–28 × 6–12 μm, subvesiculosus vel ventricosus, frequenter utriformibus, integris et levibus, obtusis, hyalinis. **Hyphis** fibulatis, pseudoamyloideis, in stipite haud gelatinosis et parallelis, in pileo et tramate hymenophorali regulari voluminosis (structura Mycenarum typicarum). **Epicute pilei** inamyloidea, cutiformi, ex hyphis filamentosis, 1–3.5 μm crassis, vix vel lenissime gelatinosis, aliis haud gelatinosis, levibus efformata; in strato inferiore hyphis similibus, 1–4 μm latis, haud gelatinosis, hoc strato intermittenter superficiem attingente. Tegumento stipitis haud gelatinoso, dermatocystidiis 15–18 × 6 μm, cystidiis hymenialibus similibus praesentibus.

Ad lignum putrefactum dicotyledoneum in silva primariae typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 6 IV 1977, *Singer B 9615* (INPA).

Mycena roriduliformis (Murr.) Dennis is closely related. Ours is scarcely or only slightly gelatinous.

***Mycena ionocephala* Sing., spec. nov.**

Pileo violaceo vel lilaceo-amethystino, (“cynet” vel 43 C 1 vel 43 D 1 M&P), sulcato, piloso sed glabrescente, haud viscoso, convexo vel campanulato, centro interdum subdepresso, 0.5–3.5 mm lato. **Lamellis** albis, ad aciem interdum violaceopunctatis, horizontalibus, mediocriter distantibus vel admodum distantibus (interdum quinque percurrentibus tantum), latis, adnatis, rarius breviter decurrentibus. **Stipite** albo, dein frequenter a basi apicem versus coriicolori vel umbrino,

longe piloso, praesertim basin versus, insititio, e. gr. 32 mm longo, 0.2 mm lato. Odore nullo.

Sporis 4–5.2 × 1.5–2.3 μm, perangustis, levibus, hyalinis, fortiter amyloideis. **Hymenio:** Basidiis 14–14.7 × 4.3–5.7 μm, tetrasporis. Cystidiolis e. gr. 20.7 × 3.5 μm, basidiolis Marasmielli simillimis. Cheilocystidiis nullis vel inconspicuis. Pilis eis pilei et stipitis simillimis sparsis. **Hyphis** pseudoamyloideis, fibulatis, in stipite parallelis, in tramate hymenophorali regulariter dispositis. **Epicute pilei** sat profunda, cutiformi, ex hyphis vix gelatinosis, filamentosis, intertextis, hyalinis, inamyloideis, in superficie ipsa externe manifeste diverticulatis efformata et pilis 60–103 × 5–9.5 μm subulatis, subacutis vel acutis, firme (pariete usque ad 0.8 μm crassa) tunicatis, inaequaliter sed frequenter crasse incrustatis (incrustatione hyalina, resinacea) obsita. Tegumento stipitis e pilis simillimis sed frequenter longioribus efformata.

Ad folia dicotyledonea delapsa in silva tropicali pluviali primariae typi terrae firmae haud raro.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 29 VI 1977, *Singer B 10025* (INPA). Additional collections: same locality, (on leaves of *Sclerone-ma micrantha*), 10 X 1977, *Singer B 10184* (INPA); same locality, 20 X 1977, *Singer B 10211* (INPA); same locality, 10 I 1978, *Singer B 10502* (INPA).

Similar species are *M. microjonja* Sing. and *M. longicrinita* Sing., but these differ from *M. ionocephala* in broader spores. The first differs also in epicutis structure; *M. longicrinita*, in addition, has different colors and thin-walled, narrower hairs.

***Mycena kermesina* Sing., Agar. mod. tax 4th ed., p. 406. 1986.**

Pileo rubro, carmesino (“salvia” M&P), glabro, levi, haud viscoso, convexo vel campanulato, dein centro leniter depresso, 2–5 mm lato. **Lamellis** aurantio-flavidis vel carneis, ad aciem rubro-marginatis (pileo concoloribus: “salvia”), sat latis, distantibus, adnatis. **Stipite** pileo concolori (sub lente subaurantiaco sed rubro-puntato), ad apicem hyalinipiloso, basin versus purpureo-rubro-piloso, filamentoso, insititio, 18–19 × 0.2 mm. **Carne** alba, immutabili, inodora.

Sporis 7–7.5 × 3.5 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 19–21 × 7.5 μm, saepe trisporis. Basidiolis subfusoides, ad basin fibulatis. Cystidiis nullis, sed cheilocystidiis

ad aciem et prope aciem lamellarum numerosis, 37–53 × 24–28 μm, subcylindratis vel ventricosis vel subvesiculososis, tenuitunicatis, ad apicem tantum typi *Rotalis* modo setulosis, setulis obtusis 1–6 × 1.5 μm, rarius saccatis et usque ad 5 × 3 μm, acie lamellarum ex eis heteromorpha. **Hyphis** latis (in tramate pilei e cellulis usque ad 62 × 35 μm), fibulatis, pseudoamyloideis, haud gelatinosis; tramate hymenophorali regulari; hyphis stipitis parallelis. **Epicute pilei** subhymeniformi, e dermatocystidiis late ventricosis vel cylindratis, interdum subvesiculososis, in KOH hyalinis efformata, his 25–37 × 12–20 μm (corpore basali) sed setulis typi *Rotalis* modo (sed ad apicem tantum) saccato-ventricosis 12–15 × 3–7 μm, raro furcatis ornatis, pariete usque ad 0.5 μm crassa, inamyloidea instructis. Subhymenio epithelioso, e cellulis subglobosis efformato. Tegumento stipitis dimorpho, (1) praesertim basin versus e dermatocystidiis 21–33 × 18–23 μm efformato, his integris, numerosis, erectis, ventricosis vel subvesiculososis vel vesiculososis, obtusis, tenuitunicatis vel leniter crassitunicatis (pariete usque ad 0.3 μm crassa), hyalinis in KOH, setulis destitutis, (2) dermatocystidiis longis, 130–235 × 15–22 μm, ampullaceis, apice (collo) excepto crassitunicatis (pariete 0.5–)1 μm hyalina in KOH); paucis dermatocystidiis intermediis inter ambos typos e. gr. 75 × 16–17 μm, ampullaceis, firme tunicatis.

Ad folia dicotyledonea delapsa in silva tropicali primariae typi terrae firmae et igapó.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 31 XI 1977, leg. *Araujo Aguiar*, *Singer B 10252* (INPA). Additional collections: same locality, 19 III 1980, *Singer B 12040* (INPA); same locality, 26 III 1980, *Singer B 12070* (INPA); Reserva Ducke, flood plain, 31 V 1985, *Singer B 13013* (F).

This species differs from others widely and in many characters. It is not rare in Amazonia and strikingly beautiful. A somewhat similar species, *M. minirubra* Stevenson (Kew Bull 19: 48. 1964) is certainly different. A short diagnosis (Singer 1986) is here completed.

***Mycena kuthanii* Sing., spec. nov.**

Pileo fuligineo (“biskra” M&P), glabro, nitido, viscoso, levi, convexo, dein applanato, umbonato, ± 19 mm lato. **Lamellis** griseis, acie fuligineis, horizontalibus, subconfertis vel subdistantibus, subsacendentibus in juventute(?), ventricosis, lib-

eris. **Stipite** fusco (pileo pallidiore), stricto, haud viscoso, levi, haud radicante, aequali, ± 53 × 2 mm. Mycelio basali sericeo, sparso, pallido. **Carne** inodora.

Sporis 10–13.5 × 6.2–8 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 35–45 × 8.5–9.5 μm, bisporis, sterigmatibus usque 12 μm longis. Cystidiis nullis. Cheilocystidiis ad aciem late heteromorpham 38–52 × 10–16 μm, ventricosis vel subclavatis, typi *Rotalis* modo hyalino-setulososis setulis 1.5–2.5 μm longis in parte tertia superiore, tenuitunicatis, inamyloideis, grisco-fusco pigmento vacuolari repletis. **Hyphis** defibulatis, haud gelatinosis; tramate hymenophorali regulari, hyalino, cellulis voluminosis 12–27 μm latis, hymenopodio magis intertexto, hyalino, haud gelatinoso. **Epicute pilei** tenui, cutiformi, superne ex hyphis diverticulatis, hyalinis, inamyloideis, subgelatinosis efformata. Hypodermio cutiformi, a tramate pilei pigmento vacuolari fusco distincto.

Ad humum sublignosum inter muscos.

TYPUS—Czechoslovakia, Moravia, Moravsko-Slovanské Beskidy, Podolánky near Celadná, 20 IV 1974, leg. *Singer & Kuthan*, *Singer C 5605* (F).

***Mycena lacrimans* Sing., spec. nov.**

Pileo griseo, glabro, sulcato, non viscoso, convexo, obtuso, haud umbilicato, 6–7 mm lato. **Lamellis** albis, latis, subdistantibus vel distantibus, paucis lamellis intermixtis, haud intervenosis, lacrimantibus ad aciem et hic resinoso-maculatis in siccis, adnatis dente decurrente. **Stipite** pallido, siccando grisente, nitido sed haud glutinoso, admodum subtiliter et distanter pruinato, glabrescente, filamentoso, aequali, 55 × 0.5 mm. Mycelio basali albo. **Carne** alba, tenui, odore nullo, sapore miti.

Sporis 7–7.8 × 2.7–3.5 μm, oblongis vel cylindratis, levibus, hyalinis, debiliter sed manifeste amyloideis. **Hymenio**: Basidiis 14–18 × 6–7.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis 24–41 × 4–11 μm, plerumque 30–40 × 7.5–8.5 μm, cylindratis vel anguste ventricoso-clavatis, obtusis, ex integro fere diverticulatis (diverticulis ad ipsam basin tantum nullis, ad apicem 3.5–4.5(–5) × 1–2 μm, ceterum 1 × 0.1–0.2 μm), sursum conspicuo obtectis exudatione amorpha, crassa, in solutione Melzeri solubili. Nonnullis gloeco-vasculis interdum hymenium attingentibus. **Hyphis** in tramate pilei radiatim dispositis, subparallelis, fibulatis, pseudoamyloideis, moderatim latis, haud gelati-

nosis, in KOH hyalinis; in stipite parallelis, fortiter pseudoamyloideis. Tramate hymenophorali structura typica Mycenarum gaudente, regulari, hyalino; hymenopodio ex hyphis nonnihil angustioribus efformato; subhymenio angusto, e cellulis minutis efformato, subcellulari. Gloeo-vasculis in tramatibus praesentibus et cum gloeocystidiis subvesiculosus nonnullis continuis, versiformibus, tenui- vel crassitunicatis (sed pariete demum dissoluta), contentu oleaginoso, amorpho et exudationibus flavis instructis. **Epicute pilei** intermittentiter filamentosa, ex hyphis repentibus superne \pm diverticulatis efformata. Hypodermio ex hyphis inflatis efformato et ubi superficiale est, ibi hyphae superne diverticulatae sunt, omnibus hyphis ascendentibus subtrichodermialibus, cellulis inflatis, voluminosus, brevibus, pseudoamyloideis. Gloeocystidiis hinc illinc visis. Tegumento stipitis e dermatocystidiis cheilocystidiis similibus efformata, sed illis diverticulis uniformiter tenuibus, brevibus, contentu obtectis et angustioribus nec non frequenter brevioribus; gloeocystidiis raris.

Ad folia dicotyledonea delapsa in silva tropicali humida, solitario.

TYPUS—Brazil, Amazonas, Reserva Ducke (\pm 25 km N of Manaus), 4 XII 1978, *Singer B 11429* (INPA).

***Mycena lecythidacearum* Sing., spec. nov.**

Pileo murino, disco fusco-griseo, longe sulcato, glabro, haud viscoso, obtuse conico vel causiiformi, frequenter margine demum recurvato, interdum subumbilicato, 8–16 mm lato, 3–10 mm alto. **Lamellis** griseis, sublatis vel latissimis, subarcuatis vel subhorizontalibus, maturis plus minusve intervenosis, distantibus, interdum paucis furcatis, adnatis, siccis subdecurrentibus. **Stipite** pallide griseo, glabro, levi, haud viscido, aequali, haud insititio, interdum basi attenuata subradicante sed plerumque peraequali et nullo modo radicante, 21–30 \times 1–2 mm. Mycelio basali sparso. Velo nullo. **Carne** albido-pallida, inodora.

Sporis 7–9 \times 5–6 μ m, plerumque 7–8 \times 5–5.5 μ m ($Q < 2$), ellipsoideis vel late ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 26–27 \times 7–8 μ m, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham 28–42 \times 2–6 μ m (sursum), subcylindraceis vel subfusoides vel filamentosis, interdum basi inflata, hyalinis, frequentius nonnullis appendiculis lateralibus ornatis quam integris, appendiculis brevibus vel

elongatis et dactylomorphis (usque ad 7 \times 1.5 μ m), ad apicem interdum furcatis, hyalinis. **Hyphis** structura Mycenarum typica gaudentibus in pileo et in tramate hymenophorali regulari, fortiter pseudoamyloideis, fibulatis, hyalinis (KOH). **Epicute pilei** e subcute gelatinosa nata, e diverticulis hyphosis vix gelatinosis, tenuibus, saepe furcatis, usque ad 12 \times 1.5 μ m metientibus efformata. Subcute gelatinosa 25–45 μ m diametri, hyalina, inamyloidea. Hypodermio fuscido, eius hyphis inflatis, pigmento intracellulari. Tegumento stipitis ex hyphis erectis ascendentibus que filamentosis, diverticulatis, inamyloideis, haud gelatinosis efformato.

Ad lignum emortuum Lecythidacearum in silva tropicali pluviali virginea typi “terra firme” gregatim vel subcaespitose.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 VI 1977, *Singer B 9920* (INPA).

***Mycena longicrinita* Sing., spec. nov.**

Pileo rubro (“poinsettia” vel “spark” M&P), sicco subfuligineo, interdum iam in vegetis subfuligineo, interdum in vegetis roseolo-brunneo vel ferrugineo-aurantiaco, interdum permanentiter fusco, admodum variabili colore, haud viscido, subtiliter hyalino-piloso, in majoribus sulcato, obtuse conico, 0.8–2.2 mm lato. **Lamellis** pallidis vel griseis, ad aciem plerumque, praesertim siccatione fuligineis vel atrobrunneis, distantibus, latis, arcuatis vel horizontalibus, adnatis, frequenter dente decurrentibus. **Stipite** pileo concolori vel fuliginascente, albo-piloso, interdum subpallido in vegetis, 6–41 \times 0.05–0.1 mm; mycelio basali interdum sparso, ceterum hyphis hyalinis radiantibus albo. **Carne** inodora, tenuissima.

Sporis 6.5–12 \times 3.3–4.5 μ m, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 22–25 \times 7.5–10 μ m, bisporis et tetrasporis. Cystidiis veris nullis, sed cystidiolis fusoides (e. gr. 17 \times 4.5 μ m) interdum praesentibus. Cheilocystidiis ad aciem heteromorpham 13–40 \times 2.5–7 μ m, omnibus diverticulatis sed versiformibus, interdum apice bi-vel trifurcatis, in parte basali levibus, hyalinis sed in lamellis vetustis et siccis porphyrobrunneis pigmento intracellulari. **Hyphis** pseudoamyloideis, in stipite parallelis, in pileo et in tramate hymenophorali regulari Mycenarum typicarum modo inflatis, fibulatis, in pileum divergentibus, hyphis longicellulatis, fuliginascentibus, pigmentum ducentibus in tramatibus

haud raris, in zona hymenopodiali et hypodermiali numerosis. Laticiferis veris in stipite nullis. **Epicute pilei** cutiformi, in vegetis hyalina vel subhyalina in KOH, hyphis externis superne diverticulis densis usque ad 5 μm longis ornatis; praeterea pilis longissimis (5–100 μm , rarius longioribus) levibus, hyalinis, interdum furcatis, 1–2 μm latis, ad basin plerumque usque ad 3–4.5 μm dilatatis, ceterum filiformibus praesentibus. Hypodermio in siccis pigmento intracellulari granuloso fuscato. Tegumento stipitis ex hyphis externis corticalibus diverticulatis et pilis longis, basin versus longissimis, eis pilei simillimis efformato.

Ad folia dicotyledonea delapsa in silva primaria tropicali typi terrae firmae solitario vel gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 13 VII 1977, *Singer B 10106* (INPA). Additional collections: same locality, 18 V 1977, *Singer B 9676* (INPA); same locality, 19 VI 1977, *Singer B 9948* (INPA); same locality, 19 VI 1977, *Singer B 9957* (INPA); same locality, 18 VI 1977, *Singer B 9989* (INPA); same locality, 23 VI 1977, *Singer B 9998* (INPA); same locality, 6 VII 1977, *Singer B 10042* (INPA); same locality, 10 X 1977, *Singer B 10133* (INPA).

The necropigment becomes visible on drying. The long hairs on pileus and stipe are striking when observed in fresh or well-dried material under binocular microscope. Other species which are red when fresh have different microscopical characteristics.

***Mycena microjonia* Sing., spec. nov.**

Pileo purpureoviolaceo, glabro, haud viscido sulcato, convexo, umbilicato, 1 mm lato. **Lamellis** in siccis pallidis, distantibus vel subdistantibus. **Stipite** sordidiore (cum brunneo) quam pileus, subtiliter piloso praesertim ad apicem, 5 \times 0.1 mm.

Sporis (6–)7–7.5 \times (3.5–)4–4.2 μm , ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 22–24 \times 7–7.5 μm , tetrasporis, basidiolis haud fusoides. Cystidiis nullis. Cheilocystidiis 12–20 \times 6–8 μm , subclavatis vel late ventricosis paucis lobis vel appendiculis sterigmatoideis ad apicem ornatis, tenuitunicatis et collabentibus, hyalinis, inamyloideis. **Hyphis** structura Mycenarum

typicarum gaudentibus, fortiter pseudoamyloideis, haud gelatinosis. **Epicute pilei** intermittenter hymeniformi et ex hyphis repentibus diverticulatis efformata, ubi hymeniformis est elementa hymenii cheilocystidiis simillima sunt, 12–21 \times 12–17 μm , omnibus cellulis hyalinis vel subhyalinis. Aliis hyphis et subhymenio et diverticulis partim pigmento atropurpureo-brunneo repletis (KOH).

Ad folia dicotyledonea delapsa in silva primaria, tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 29 VIII 1977, leg. *Izonete Araujo Aguiar*, comm. *Singer B 10143* (INPA).

The abundant dermatocystidia which form intermittent hymeniform areas, as well as the violet pigment and the fruiting season during the drier months of the year, are noticeable. The species is rather rare in Central Amazonia and has not been discovered elsewhere.

***Mycena microleucoides* Sing., spec. nov.**

Pileo candido, glabro, sulcato, convexo, raro papillato, 1–2 mm lato. **Lamellis** albis, angustis vel mediocriter latis, primum ascendentibus, mox horizontalibus, distantibus, anguste adnexas. **Stipite** albo, glabro, filamentoso, 22–23 \times 0.1 mm. Mycelio basali hyalino-albo. **Carne** tenuissima, odore nullo percepto.

Sporis 5.5–8 \times 3.5–4 μm , ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis 12–13 \times 6.5–7.5 μm , tetrasporis, basidiolis subglobosis. Cystidiis nullis. Cheilocystidiis inter basidia sparsis, cylindratis vel ventricosis, ad apicem diverticulis obtusis erectis vel obliquis paucis ornatis, hyalinis, tenuitunicatis. **Hyphis** Mycenarum typicarum modo inflatis, hyalinis, fibulatis, pseudoamyloideis. **Epicute** cutiformi, ex hyphis tenuissimis superficiem versus diverticulis brevissimis, obtusis, vix densis instructis efformata. Strato corticali stipitis haud gelatinoso, tegumento nullo.

Ad folia dejecta *Alni jorullensis* H. B. & K. gregatim in silvis montanis.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 9 II 1965, *Singer T 3898* (F).

This species is similar and related to *M. microleuca* Sing.

***Mycena micromelaena* Sing., spec. nov.**

Pileo atrogriseo vel griseolo-fuligineo, demum subnigro, centro concolori vel pallido, extra centrum sulcato, subverticali, ad marginem extremum interdum albido, centro applanato vel subdepresso, ceterum convexo, ubique glabro, 2.5–3.5 mm lato. **Lamellis** albis, in siccis etiam albis, latissimis, subarcuatis, simplicibus, demum subintervenosis, distantibus, adnato-subdecurentibus. **Stipite** albo, macroscopice glabro et sub lente glabrescente, haud viscoso, aequali, 16–30 × 0.2–0.3 mm. Mycelio basali albo, radiante. **Carne** alba, immutabili, tenuissima, inodora.

Sporis 7.7–10.7 × 4–5 μm, ellipsoideis vel oblongis, raro ovatis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 16–22.5 × 6–7 μm, tetrasporis, perpaucis bisporis. Cystidiis paucis, cheilocystidiis identicis. Cheilocystidiis 28–30 × 6–12.5 μm, ex integro subtiliter diverticulatis, (diverticulis ad apicem cellulae 1.5–2.2 μm ad latera 0.7–0.8 μm altis), hyalinis, obtusis, fusoideis vel ampullaceis, ventricosis, contentu visibili nullo. **Hyphis** Mycenarum typicarum modo inflatis, hyalinis, pseudoamyloideis, haud gelatinosis, tenuitunicatis, fibulatis. **Epicute pilei** cutiformi, hyphis externis superne diverticulatis, hyalinis. Hypodermio cutiformi, ex hyphis latiusculis sepiaceis vel spadiceis e pigmento vacuolari efformato. Dermatocystidiis in carpophoris maturis nullis vel raris, sed in immaturis stipitibus nonnullis dermatocystidiis eis hymenii similibus visis.

Ad folia dicotyledonea delapsa in silva primaria tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 10 XI 1977, *Singer B 10276* (INPA).

***Mycena micropolia* Sing., spec. nov.**

Pileo brunneolo-griseo vel fuscidulo-griseo, sparse hyalino-piloso, sulcato, convexo, 1 mm lato. **Lamellis** griseis acie griseis vel pallidis, distantibus (septem), late adnatis. **Stipite** atrogriseo, fortiter hyalino-piloso, filiformi, 6–7 × 0.1 mm. Mycelio basali exiguo, hyalino, sericeo, breviter radiante, sub lente tantum visibili. **Carne** inodora.

Sporis (7–)9–9.5 × (2.8–)4–4.8 μm, ellipsoideis, paucis oblongis, levibus, hyalinis, debiliter amyloideis. **Hymenio:** Basidiis 19–22 × 6–8 μm. Cystidiis haud visis. Cheilocystidiis e. gr. 20 × 8.5 μm, versiformibus, saepe clavatis, setulis ex in-

tegro vel ad apicem tantum obsitis, hyalinis. Pilis hyphoideis paucis vel raris, usque ad 150 μm longis, 4–10 μm latis, obtusis vel acutis, hyalinis, tenuiter vel firme tunicatis. **Hyphis** Mycenarum typicarum modo inflatis, pseudoamyloideis, haud gelatinosis. **Epicute pilei** cutiformi, ex hyphis filamentosis, superne diverticulis 1–4 μm altis ornatis efformata, in KOH pigmento vix visibili. Hic ita ut in stipitis superficie pilis eis acieis lamellarum simillimis praesentibus, in stipite numerosis.

Ad folia dicotyledonea delapsa solitario in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 8 VIII 1977, *Singer B 10133* (INPA).

This differs from *M. microtrichialis* Sing. in larger spores and pigmentation.

***Mycena microstena* Sing., spec. nov.**

Pileo uniformiter griseo, demum subtiliter sulcato-striato per medium radium, subpruinato, conico-campanulato, 1 mm alto et lato. **Lamellis** albis, siccando pallide sordideque griseolis, ascendentibus, angustis, mediocriter distantibus, adnatis. **Stipite** pallide vel dilute griseo, subpruinato, aequali, flexuoso, disco basali destituto, 7 × 0.05 mm. Mycelio basali albo. **Carne** tenuissima, inodora.

Sporis (in typo paucis) ± 6.5 × 3 μm, ellipsoideo-oblongis, levibus, hyalinis, debiliter amyloideis. **Hymenio:** Basidiis 16 × 7 μm. Cystidiis nullis. Cheilocystidiis inconspicuis, 25–28 × 1–4 μm, subfilamentosis, apicem versus leniter angustatis, raro furcatis, hyalinis. **Hyphis** Mycenarum typicarum modo inflatis, pseudoamyloideis, haud gelatinosis. **Epicute pilei** ex elementis vesiculososis, subtiliter diverticulatis vel levibus, tenuitunicatis, pigmentatis vel hyalinis, 11–20 × 8.5–14 μm efformata; multis ex eis liberis. Tegumento stipitis ex elementis similibus efformato, sed praeterea dermatocystidiis cylindraceis vel clavato-ventricosis ex integro diverticulatis moderatim numerosis et eis Mycenae osmundicolae brevioribus praesentibus. Pigmento vacuolari, frequenter colloidally condensato.

Ad lignum emortuum Dicotyledonum in silva tropicali typi campinaranae solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 10 VIII 1978, *Singer B 11357* (INPA).

This belongs in stirps *Osmundicola*, see also note under *M. depilata* Sing. and *M. hemitrichialis* Sing.

Mycena microtephra Sing., spec. nov.

Pileo minore (± 4 mm), **stipite** minore ($\pm 7 \times 0.3$ mm), **basin** versus castanescente; **sporis** non-nihil latioribus et habitatione in ramulo ligneo in *Aletis* a *M. hydropodoidi* Sing. differt.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 9 II 1965, *Singer T 3918* (F).

Mycena microtrichialis Sing., spec. nov.

Pileo pallide fuscido vel albo, **lamellis** albis vel albidis, **sporis** minoribus ($3.5\text{--}7 \times 2.3\text{--}4 \mu\text{m}$, plerumque $5\text{--}6 \times 2.5\text{--}3 \mu\text{m}$, admodum versiformibus), **cheilocystidiis** typi Sicci vel sursum ramosis, nec non praesentia **dermatocystidiorum** $8\text{--}13 \times 3.5\text{--}8 \mu\text{m}$, \pm crassitunicatis differt, sed characteribus ceteris, praesertim pilorum longorum pilei et stipitis levibus, hic $80\text{--}300 \times 2\text{--}4 \mu\text{m}$, tenui-vel firme tunicatis cum *M. micropolia* Sing. congruit.

In silva tropicali typi terrae firmae ad folia dicotyledonea.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 10 I 1978, *Singer B 10506a* (INPA).

Mycena microxantha Sing., spec. nov.

Pileo minuto (1–2 mm), **lamellis** sex tantum; **cheilocystidiis** paullum minoribus ($23\text{--}37 \times 7.5\text{--}10 \mu\text{m}$, apice $4.5\text{--}6 \mu\text{m}$ diam.) **stipite** minore ($5\text{--}10 \times 0.1$ mm); **sporis** amyloideis et **hyphis** pseudoamyloideis a *Mycena oregonensi* Smith (vix affini) differt; ab affiniore *M. gracilipede* (Murr.) Murr. coloribus et **sporis** paullum minoribus; ab ambobus habitatione differt. Subinsititia est.

Ad folia dicotyledonea delapsa in silva inundabili typi igapó gregatim.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 8 IX 1978, *Singer B 11388* (INPA). Additional collection: same locality, 21 II 1980, *Singer B 12017* (INPA).

Mycena muciflua (Höhn.) Sing., comb. nov.

BASIONYM—*Collybia muciflua* Höhn., Sitz.-ber. K. Akad. Wiss. Wien 118: 276. 1909.

The type of *M. roriduliformis* (Murr.) Dennis, *M. roridula* (Berk. & Curt.) Sacc., *M. euspeireae* (Berk. & Curt.) Sacc. (all FH) represent a strictly related group of *Mycenas*, subsect. *Caespitosae* A. H. Smith.

Mycena nanoclavula Sing., spec. nov.

Mycenae claviculari (Fr.) Gillet affinis et carpophoris multum minoribus (**pileo** 3–3.5 mm lato; **stipite** $8 \times 0.1\text{--}0.2$ mm), **sporis** paullum minoribus ($6\text{--}9.5 \times 2.5\text{--}3.5 \mu\text{m}$) nec non omnibus partibus albis differt, sed stipite glutine oblecto et typo cheilocystidiorum et dermatocystidiorum congruit.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10829* (INPA).

Mycena neotropicalis Sing., spec. nov.

Characteribus *Marasmielli foliicolae* Sing. in Sing. & Digilio, Lilloa 25: 148. 1951 gaudet, sed in *Mycenam* transferenda, ubi *Mycena foliicola* Métrod, Prodr. Flore Myc. Madagascar 3: 131. 1949 non identica. *Mycenae theobromicolae* Dennis similis sed cheilocystidiis $11\text{--}42 \times 3\text{--}6.5 \mu\text{m}$, haud typi *Rotalis* modo diverticulatis, sed integris et levibus, summopere variabilibus forma. Tramate pilei et hymenophori regularis inamyloideo in typo *M. neotropicalis*.

TYPUS—Argentina, Tucumán, Sierra de San Javier, 24 IV 1951, *Singer T 1523* (LIL).

Mycena pantopolia Sing., spec. nov.

Pileo atrogrieseo, sulcato, glabro, haud viscoso, convexo, obtuso, demum centro subdepresso, ± 5 mm lato. **Lamellis** griseis, subconfertis, adnatis. **Stipite** murino, apice albo, glabro, $28\text{--}33 \times 0.5$ mm. **Mycelia** basali albo. **Carne** alba, inodora.

Sporis $6.7\text{--}9.8 \times 3.3\text{--}4.8 \mu\text{m}$, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio**: **Basidiis** $14\text{--}19 \times 6 \mu\text{m}$, tetrasporis. **Cystidiis** nullis. **Cheilocystidiis** ad aciem heteromorpham $\pm 20 \times 4 \mu\text{m}$, ad et prope apicem appendicibus exiguis dactylomorphis erectis vel subobliquis, usque ad $4.5 \mu\text{m}$ longis ornatis, subtus anguste subventricosis, raro bifidis, omnibus hyalinis. **Hyphis** hy-

alinis in tramatibus, Mycenaarum typicarum modo inflatis, pseudoamyloideis, fibulatis, nulla in parte gelatinosis. **Epicute pilei** tenuissima, hyalina, hyphis filamentosis superne diverticulatis constituta, cutiformi, inamyloidea. Hypodermio cutiformi, ex hyphis inflatis, pseudoamyloideis pigmentatis efformato; pigmento griseo-fusco, vacuolari.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 20 II 1978, *Singer B 10683* (INPA).

Mycena vitilis (Fr.) Quél. sensu Lange = *M. filipes* (Bull. ex Fr.) Kummer sensu Kühner is very similar and related. The Amazonian species differs especially in smaller spores, smaller pileus, shorter stipe, and smaller cheilocystidia.

Mycena pluvialis Sing., spec. nov.

Pileo fusco, levi vel brevissime sulcato, glabro, margine partim crenulato, convexo-subcampanulato, papillato, 2.5 mm alto et lato. **Lamellis** pallide griseis, satis angustis, ascendentibus, medioeriter distantibus, stipitem versus angustatis, adnexis. **Stipite** griseolo-pallido, interdum pallide griseo, glabro, haud viscoso, subaequali, $\pm 8.5 \times 0.6$ mm. Mycelio basali albo. **Carne** tenui, immutabili, inodora.

Sporis $7.5\text{--}9 \times 6\text{--}7 \mu\text{m}$, breviter ellipsoideis, rarius subglobosis, levibus, hyalinis, acyanophilis, haud carminophilis, pariete subfirma instructis, inamyloideis. **Hymenio:** Basidiis $27\text{--}35 \times 8.8\text{--}10 \mu\text{m}$, tetrasporis, clavatis, haud siderophilis; basidiolis haud fusoides. Cystidiis raris cheilocystidiis simillimis. Cheilocystidiis numerosis sed haud densis, $23\text{--}28 \times 10\text{--}12 \mu\text{m}$, basidiomorphis, contentu visibili nullo, pariete tenui, levi, hyalina. **Hyphis** Mycenaarum typicarum modo inflatis (cellulis e. gr. $55 \times 25 \mu\text{m}$), hyalinis vel fuscidulo-hyalinis, in tramate hymenophorali regulariter dispositis, in stipitis tramate parallelis, omnibus inamyloideis, fibulatis. **Epicute pilei** tenuissima, intermitte, hyalina vel fuscidulo-hyalina, ex hyphis repentibus, in strato superno $1.2\text{--}3 \mu\text{m}$ latis, in strato inferiore $\pm 5 \mu\text{m}$ latis, omnibus levibus et inamyloideis; dermatocystidiis nullis. Hypodermio cutiformi, ex hyphis latis et moderatim longe cellulatis fuscis efformato; pigmento parietes incrustante; pigmento intracellulari (in KOH) vix evidente. Tegumento stipitis nullo viso.

Ad lignum putrescens dicotyledoneum diffractum in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 13 VII 1977, *Singer B 10093* (INPA).

It is easy to mistake this species for a *Hydropus* of sect. *Floccipedes*, but the incrusting pigment and the structure of the trama show that it belongs in *Mycena*.

Mycena poecila Sing., spec. nov.

Pileo buxio-flavo, demum atro-maculato, sicco rubido-brunnescente et striis pallidioribus variegato, convexo, dein centro umbilicato, glabro, usque ad 3 mm lato. **Lamellis** sordide pallidis, acie plerumque olivaceo-flava, in siccis pileo subconcolori instructis, arcuatis, distantibus, breviter decurrentibus. **Stipite** succineo vel castaneo, sub lente subtiliter pruinato, aequali sed apice dilatato, usque ad 30 mm longo, $0.1\text{--}0.3$ mm lato. Mycelio basali praesente. **Carne** tenui.

Sporis dimorphis $8\text{--}16 \times 4\text{--}5.7(7) \mu\text{m}$, ellipsoideis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis $15\text{--}18 \times 7\text{--}9.5 \mu\text{m}$, 2-3-4-sporis. Cystidiis paucis et cheilocystidiis simillimis. Cheilocystidiis $15\text{--}42 \times 3.5\text{--}8 \mu\text{m}$, utriforibus apice brevi angustato, obtuso munitis, vel ampullaceis, interdum "collo" recurvato, in KOH subhyalinis vel hyalinis. **Hyphis** Mycenaarum typicarum modo inflatis, haud gelatinosis, pseudoamyloideis, fibulatis. Hyphis nonnullis pigmentiferis ochreis vel atro-badiis, $7\text{--}16 \mu\text{m}$ latis. **Epicute pilei** ex hyphis repentibus, levibus vel diverticulatis efformata, tenuissima et interdum intermitte, diverticulis brevissimis et interdum irregularibus. Tegumento stipitis e dermatocystidiis minutis versiformibus, $8\text{--}16(22) \times 4.5\text{--}5(8.5) \mu\text{m}$ efformato, his levibus et moderatim numerosis.

Ad folia dicotyledonea emortua in silvis tropicalibus typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10849* (INPA).

Collection *Singer B 10807* from igapó (inundated forest) differs from others in lighter color (more diluted pigment), especially when studied on fresh material, furthermore in smaller pileus and stipe, but it fruits at the same time at the beginning of the rainy season and has identical characteristics of spores and cystidia. On the other hand, the pigment of the hyphae of the stipe is very distinct; but these hyphae do not seem to be

lactiferous; the internal pigment being ocher-mel-
leous, the incrustations reddish-bay color, and the
septa rather numerous. No latex has been seen in
any of the collections.

***Mycena poliocephala* Sing., spec. nov.**

Pileo griseo, haud viscoso, fortiter sulcato per
radii duas tertias, glabro, globoso, mox subcam-
panulato-convexo, 2 mm lato. **Lamellis** superne
griseolis, aciem versus albis, moderatim latis, sub-
arcuatis sed primum partim subascendentibus,
subdistantibus vel subconfertis, haud interven-
osis, adnatis sed haud decurrentibus. **Stipite** albo,
macroscopice glabro levique, sub lente subtiliter
pruinoso, aequali, bulbo destituto, $8.5 \times 0.1-0.2$
mm. Mycelio basali albo-crinato, crinibus myce-
lialibus erectis. **Carne** tenuissima, alba, immuta-
bili, inodora.

Sporis $6.2-7.5 \times 3-3.7 \mu\text{m}$, oblongis, levibus,
hyalinis, amyloideis. **Hymenio**: Basidiis (13-)13.5-
17.5 \times 5-6.7 μm , tetrasporis. Cystidiis nullis.
Cheilocystidiis inter basidia sat numerosis sed haud
conspicuis, (10-)14-17 \times 3.5-5.3 μm , subulatis,
lanceolatis, cylindraceutis, interdum uno vel duobus
mucronibus apicalibus instructis, tenuitunicatis,
hyalinis. **Hyphis** hyalinis, Mycenaarum typicarum
modo inflatis, sed nonnullis filamentosis inter-
mixtis, pseudoamyloideis, fibulatis; tramate hy-
menophorali regulari. **Epicute pilei** ex hyphis dil-
latatis, saepe furcatis, haud gelatinosis, apicaliter
et frequenter etiam lateraliter diverticulatis, densis
efformata. Hypodermio gelatinoso $\pm 50 \mu\text{m}$ pro-
funditate, hyalino, ex hyphis filamentosis, 1 μm
latis, ascendentibus, inamyloideis efformato. Stra-
to subhypodermiali pigmentato, ex hyphis eis tra-
matis pilei simillimis, sed pigmentatis, haud ge-
latinosis efformato; pigmento fusco, dissoluto,
vacuolari. Tegumento stipitis haud gelatinoso,
dermatocystidiis moderatim numerosis vel nu-
merosis, pruina formantibus, 20-43 \times 6-12 μm ,
ampullaceis vel subulatis, obtusis, tenuitunicatis,
haud diverticulatis, integris.

Ad folia delapsa dicotyledonea in silva tropicali
typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus,
9 II 1978, *Singer B 10625* (INPA).

This species differs from those of sect. *Caerulescentes* in the absence of blue pigments. It is very close to *M. omniumsanctorum* Sing. described from Chile. It differs from the latter in the colored pileus

(white in *M. omniumsanctorum*) and foliicolous habitat (lignicolous in *M. omniumsanctorum*).

***Mycena porphyrocephala* Sing., spec. nov.**

Pileo atropurpureo vel, praesertim marginem
versus, laetius purpureo ("garnet," "dark cardi-
nal," "pirilla purple," centro plerumque 48 L 4
M&P), convexo, centro umbilicato vel umbonato,
5-10 mm lato, glabro, haud viscoso, vix sulcato.
Lamellis pallide lilaceis, acie concoloribus, con-
fertis vel mediocriter confertis, subascendentibus
sed dein frequenter horizontalibus vel arcuatis, ad
latera interdum (in vetustis) venosis vel sparse in-
tervenosis, satis angustis vel mediocriter latis, ad-
natis. **Stipite** lamellis concolori, glabro, subae-
quali, 20-22 \times 0.5-1 mm. Mycelio basali
inconspicuo, radiante. **Carne** superficiebus sub-
concolori, tenui, inodora.

Sporis (7-)7.5-10.5 \times 4.5-6 μm , plerumque
 $\pm 10 \times 5 \mu\text{m}$, ellipsoideis, levibus, hyalinis, amy-
loideis. **Hymenio**: Basidiis 17-20.5 \times 5.5-8 μm ,
2-3-4-sporis; basidiolis haud fusoides. Cystidiis
nullis. Cheilocystidiis ad aciem heteromorpham
22-24 \times 10-20 μm , typi Rotalis modo diverticulis
numerosis 1-1.5 μm longis obsitis, vesiculosis, in-
tus pallide lilacinis. **Hyphis** plerumque Mycenaarum
typicarum modo inflatis (usque ad 12-20 μm
inflatis), debiliter sed manifeste pseudoamyloid-
eis, fibulatis, haud gelatinosis. **Epicute pilei** tenui,
cutiformi, ex hyphis in KOH hyalinis vel subhy-
alinis, superne breviter sed dense diverticulatis,
omnibus filamentosis (1.5-2 μm latis) efformata;
diverticulis 1-1.5 μm altis. Hypodermio cutiformi,
ex hyphis eis tramatis pilei similibus, sed pig-
mento pallide lilacino intracellulari impletis
(NH₄OH) efformato.

Ad folia dicotyledonea delapsa in silva typi ter-
rae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus,
10 I 1978, *Singer B 10500* (INPA). Additional col-
lection: same locality, 2 III 1978, *Singer B 10755*
(INPA).

Mycena strobilinoidea Peck differs in colors and
habitat.

***Mycena semipilosa* Sing., spec. nov.**

Pileo albo, sulcato, glabro, haud viscido, cam-
panulato vel convexo, 0.3-2 mm lato. **Lamellis**

albis, mediocriter latis, distantibus, ascendenti-bus, adnexis. **Stipite** albo, in parte inferiore piloso et gradatim minus piloso apicem versus, filamentoso, $15-20 \times 0.05-0.2$ mm. Mycelio basali dense hyphoso, appanato-radiante, subdisciformi sed admodum angusto nec sulcato. **Carne** in pileo subnulla, inodora.

Sporis $5-7.5 \times 2.5-4.2 \mu\text{m}$, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio**: Basidiis $9-13.5 \times (4.5-5.5-7 \mu\text{m})$, tetrasporis. Cystidiis nullis. Cheilocystidiis prope marginem pilei sparsis, dermatocystidiis pilei simillimis. **Hyphis** usque ad $20 \mu\text{m}$ latis, pseudoamyloideis, fibulatis, hyalinis, Mycenarum typicarum structurae similibus, Tramate hymenophorali regulari. Stratis gelatinosis nullis. **Epicute pilei** ex hyphis prostratis, ad latus supernum diverticulatis et dermatocystidiis typi Rotalis modo diverticulatis, plerumque erectis et perpauca pilis hyphosis levibus eis stipitis simillimis efformata; dermatocystidiis ventricoso-clavatis vel subvesiculososis, diverticulis usque ad $4.5(-7.5) \times 1 \mu\text{m}$; cellulis liberis nullis. Tegumento stipitis hypho-piloso, pilis usque ad $60 \times 0.5-1.5 \mu\text{m}$, obtusis, filamentosis, tenuitunicatis, levibus, hyalinis, pilis prope apicem stipitis nonnihil brevioribus.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10821a* (INPA).

This species belongs in stirps Polyadelphia. It is similar to *M. microtrichialis* Sing., but has more ascendant lamellae and colorless stipe.

Mycena subtenerima Sing., spec. nov.

Pileo albo, sub lente albo-granoso, convexo, obtuso vel umbone exiguo munito, $2-3.5$ mm lato. **Lamellis** albis, subdistantibus, haud ascendenti-bus, sat latis, adnexis. **Stipite** albo, pubescente vel breviter piloso, aequali vel vix dilatato ad basin, disco destituto, basi albo-piloso, $8-22 \times 0.1-0.2$ mm. **Carne** tenuissima, inodora.

Sporis $7-9.3 \times 2.7-4.8 \mu\text{m}$, ellipsoideis vel oblongis, levibus, hyalinis, debiliter amyloideis. **Hymenio**: Basidiis (2-)4-sporis. Cystidiis nullis. Cheilocystidiis paucis, inconspicuis, $10-19 \times 4.5-7.5 \mu\text{m}$, aut clavatis et nonnullis appendiculis brevibus (usque ad $2 \mu\text{m}$ longis) apicalibus ornatis aut anguste utrififormibus vel ampullaceis et tunc integris et levibus, omnibus hyalinis, inamyloid-

eis. **Hyphis** latis, hyalinis, tenuitunicatis, haud gelatinosis, fortiter pseudoamyloideis, fibulatis, eis stipitis parallelis. **Epicute pilei** e cellulis globosis, plerumque levibus vel sublevibus accumulatis formata et nonnullis sphaerocystibus diverticulatis, hyalinis, pariete inamyloideis tenui vel firma (usque ad $0.5 \mu\text{m}$ crassa) instructis, $23-28 \times 17-23 \mu\text{m}$, supra illas liberis praesentibus. Tegumento stipitis e pilis $50-130 \times 6-10 \mu\text{m}$ efformato, his subulatis, levibus vel minute (usque ad $0.5 \mu\text{m}$ altitudine) diverticulatis, apice acutis vel subacutis vel obtusis, tenuitunicatis, hyalinis, inamyloideis.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 14 VI 1977, *Singer B 9942* (INPA).

This species is similar to *M. polyadelphia* (Lasch) Kühner, tropical form, but can be distinguished easily because of the granular surface of the pileus formed by sphaerocysts. These sphaerocysts often remind one of cheroocytes and are homologous with them, but neither star-shaped nor thick-walled.

Hydopus californicus Sing., spec. nov.

Pileo griseo-brunneo, sicco griseo, neque innate fibrilloso nec sulcato, haud viscido, convexo, centro moderatim depresso, $6-7$ mm lato. **Lamellis** pallidis, distantibus, haud intervenosis, mediocriter latis, decurrentibus. **Stipite** pallido, sicco leniter grisascente, subtiliter hyalino-pubescente sub lente, centrali, nonnihil longiore diametro pilei, ± 0.5 mm lato. Mycelio basali sparso, pallido. **Carne** albida.

Sporis $7-10 \times 4-5.5 \mu\text{m}$ (e basidiis tetrasporis probabiliter $7-8.3 \times 4-5 \mu\text{m}$, e bisporis $8.5-10 \times 4-5.5 \mu\text{m}$), ellipsoideis, paucis ellipsoideo-oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis tetrasporis et bisporis praesentibus, illis $22.5 \times 6 \mu\text{m}$, his $22-24 \times 5.5 \mu\text{m}$. Cystidiis nullis vel perraris. Cheilocystidiis ad aciem numerosis, $21-33 \times 4.5-5.5 \mu\text{m}$, versiformibus, plerumque anguste utrififormibus vel subcylindraceutis, nonnullis appendice digitiformi apicali munitis, tenuitunicatis, hyalinis, contentu nullo visibili, raro furcatis. **Hyphis** filamentosis latisque ($2-27 \mu\text{m}$ latis), structuram Mycenarum typicarum haud in mentem revocantibus, hyalinis in tramate pilei et in tramate hymenophorali regulari, omnibus haud gelatinosis, in stipite parallelis et tenuiter vel firme

tunicatis, inamyloideis vel hic vix vel lenissime pseudoamyloideis, filamentosis vel usque ad 10 μm latis, multis hyphis fibulatis sed aliis defibulatis. **Epicute pilei** e dermatocystidiis sparsis vel hinc inde aggregatis efformata, haud hymeniformi; dermatocystidiis cheilocystidiis simillimis, sed magis versiformibus, 18–50 \times 4.8–6.5 μm . Hypodermio cutiformi sed partim ex hyphis ascendentibus efformato, cellulis frequenter brevibus et perlatis, Mycenas typicas in mentem revocantibus, inamyloideis, in strato superiore 2–5 μm latis, in strato inferiore profundiore usque ad 27 μm latis, partim hyphas catenulatas, \pm intertextas efformantibus, in KOH fuscidulis; pigmento vacuolari. Tegumento stipitis e dermatocystidiis numerosis efformato, his 15–41 \times 3.5–5.7 μm , cheilocystidiis aut dermatocystidiis pilei simillimis.

Ad ligna in silva mixta, subgregario.

TYPUS—USA, California, Marin County, Audubon Canyon Ranch, 19 XI 1981, *C. Calhoun 81-2590* (F).

This species belongs in sect. *Mycenoides* and is related to *H. microcephalus* Sing., from which it differs in narrower cheilo- and dermatocystidia and less narrow lamellae. *Mycena umbrina* A. H. Smith differs in strongly amyloid spores. *Clitocybe concaviformis* Murr. (Fla. Acad. Sc. Proc. 7: 107. "1944", 1945) from Florida seems rather similar both macro- and microscopically, although the dermatocystidia are often broader and the cheilocystidia longer. However, the type (FLAS) is immature and the spores are dubious. It is probably rather an immature form of *H. griseoniger* Sing. in sched. ined. (see Flora Neotropica 32: 78. 1982).

Hydropus cystidiosus Sing., spec. nov.

Pileo albo, centro gilvo-albido, subhygrophano, haud viscoso, macroscopice glabro sed sub lente haud dense subtiliter pubescente, convexo, dein concavo, obtuso, \pm 11 mm lato. **Lamellis** albis, confertis vel confertissimis, angustis, stipitem versus attenuatis et vix decurrentibus. **Stipite** albo, sub lente pubescente, apicem versus gradatim attenuato, 11 \times 1.5 mm. Mycelio basali sparso, albo. Carne alba, inodora.

Sporis (7.5–)9–9.5 \times (3.5–)4–4.3 μm , fusoideis vel oblongis, levibus, hyalinis, inamyloideis. **Hymenio**: Basidiis 15–26 \times 6–7 μm . Cheilocystidiis dimorphis, (1) 20–30 \times 6–6.5 μm , ampullaceis,

(2) 21–38 \times 6–9.2 μm , capitatis vel subcapitatis, sub capitulo anguste cylindratis vel ventricosis et supra ventrem constrictis, nonnullis leniter et tenuissime hyalino-incrustatis; omnibus integris, levibus, hyalinis, tenuitunicatis. Cystidiis ad latera lamellarum numerosis, ad aciem sparsis, 21–40 \times 6–8.8 μm , fusoideo-mucronatis, raro ampullaceis (apice brevi, angusto), pariete basin versus subincrassata vel omnino firma instructis, nonnullis incrustatione subhyalina resinacea tenuiter incrustatis, paucis contentu optice (in KOH) haud manifesto gaudentibus, plerumque contentu visibili destitutis. **Hyphis** fibulatis, inamyloideis, hyalinis; tramate hymenophorali regulari, hyphis stipitis subparallelis, inamyloideis, omnibus hyphis 2–19 μm latis (plerumque 7–13.5 μm diam.). **Epicute pilei** e dermatocystidiis dispersis sed numerosis efformata, his 19–26 \times 5.5–7.5 μm , forma sua cheilocystidia typi primi in mentem revocantibus, rarius anguste ventricosis, plerumque utriusformibus vel capitatis, hyalinis. Hypodermio in strato superiore e cute hypharum levium efformato, in strato inferiore ab hyphis tramatis pilei vix distinguendo, pigmento haud viso (KOH). Tegumento stipitis e dermatocystidiis numerosis 20–38 \times 6–9.2 μm hyalinis, eis pilei simillimis sed saepe majoribus efformato.

Ad lignum dicotyledoneum mortuum in silva tropicali pluviali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, ("EMBRAPA"), 13 VII 1977, *Singer B 10089* (INPA).

This differs from the species of sect. *Mycenoides* as far as they are similar and comparable in the absence of pigment and in the dimorphic cheilocystidia. The type is preserved under the herbarium name "*Hemimycena cystidiosa*" ined.

Hydropus fuscogriseus Sing., spec. nov.

Pileo fusco-fibrilloso radiatim supra stratum basale pallide griseum, papilla noduliformi sepiacea vel atrofusca ornato, nec viscido neque hygrophano, convexo, mox circum papillam manifestam applanato, \pm 16 mm lato. **Lamellis** sordide cremeo-griseis vel griseis, mediocriter latis. distantibus, intervenosis, decurrentibus. **Stipite** uniforniter griseolo-pallido, lenissime fibrillosulo sed haud pubescente, aequali, curvato, haud insititio, 24 \times 1 mm. **Carne** sat tenui, inodora.

Sporis 6.5–7.7 \times 4.3–4.7 μm , ellipsoideis, levibus, hyalinis, inamyloideis, guttula olei ellipso-

idea praeditis. **Hymenio:** Basidiis $31.5 \times 6.5 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis sat numerosis, $30\text{--}40 \times 5\text{--}8 \mu\text{m}$, cylindratis vel ventricosis, frequenter leniter constrictis, apice rotundatis, hyalinis, contentu haud visibili ullo, tenuitunicatis. **Hyphis** hyalinis, inamyloideis, fibulatis. **Epicute pilei** tenuiter cutiformi, ex hyphis $1.5\text{--}2.5 \mu\text{m}$ diam. efformata, hyalina; hyphis sparse vel raro diverticulis angustis, interdum sat longis praeditis, sed dermatocystidiis nullis, structura Ramealium nulla. Hypodermio ex hyphis latioribus, nonnullis breviter cellulatis inflatisque, fusco-griseis efformato, cutiformi; pigmento dissoluto, vacuolari.

Ad lignum subustum in silva tropicali typi campanaraneae sub arboribus dicotyledoneis solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 110, 4 IV 1978, *Singer B 10925* (INPA).

This species is related to *H. hygrophilus* Sing.

Hydropus indicus Sing., spec. nov.

Pileo centro griseolo et margine albo in liquido, cinerascens in siccis, glabro, subapplanato. **Lamellis** albis, moderatim confertis, subhorizontalibus, mediocriter latis, sinuato-adnatis cum lineis ad apicem stipitis decurrentibus. **Stipite** albo, glabro vel subglabro, subfilamentoso, sat longo, mycelio basali albedo. **Carne** albida.

Sporis $5.5\text{--}6.5 \times 4.5\text{--}5.3 \mu\text{m}$, globosis vel subglobosis, levibus, inamyloideis. **Hymenio:** Basidiis $21\text{--}22.5 \times 5.3 \mu\text{m}$, (2-)4-sporis. Cystidiis $15\text{--}38 \times 9\text{--}30 \mu\text{m}$, ventricosis vel globosis et longe pedicellatis, late rotundatis ad apicem, pariete hyalina, tenui-instructis, intus hyalinis, ad aciem et latera lamellarum praesentibus. **Hyphis** versiformibus, inamyloideis, haud gelatinosis, fibulatis, $3\text{--}26 \mu\text{m}$ latis. **Epicute pilei** cutiformi, ex hyphis tenuissimis, $1\text{--}2 \mu\text{m}$ latis, levibus, efformata. Hypodermio ex hyphis latis et angustis efformato, cutiformi, Tegumento stipitis ex pilis cystidiformibus efformato, his plerumque ad basin bulbose inflatis et $5\text{--}7.2 \mu\text{m}$ latis, superne longe filiformibus et filamentosis ($1\text{--}3 \mu\text{m}$ latis), apice obtusis vel subacutis vel acutis, rarius claviculariter inflatis (usque ad $3 \mu\text{m}$ diam.), $33\text{--}90 \mu\text{m}$ longis, aliis (rarioribus) cystidiis similibus, e. gr. $12 \times 5 \mu\text{m}$ et ventricosis, omnibus hyalinis et tenuitunicatis.

Ad lignum.

TYPUS—India, Punjab, prope Patiala, *Saini 19* (F).

This species belongs in subsect. *Floccipedes* and comes close to *H. floccipes* (Fr.) Sing. and *H. gomzeii* Sing., but is characterized by the mostly strikingly effilate dermatocystidia.

Hydropus martensii Sing., spec. nov.

Pileo brunneo aut fusco, sicco fusco-subfuligineo, glabro, leniter sulcato, subconfragosulo, convexo, anguste umbilicato, in siccis $4\text{--}4.5 \text{ mm}$ lato. **Lamellis** subpallidis, mediocriter latis, subconfertis, decurrentibus. **Stipite** fuscidulo-pallido, macroscopice glabro, sub lente pruinoso, in siccis $8\text{--}10 \times 0.3 \text{ mm}$. Mycelio basali albo, in ligno nocte alboviridi-lucens.

Sporis $5.8\text{--}7.5(-8.3) \times (3.3\text{--})4.5\text{--}5.2 \mu\text{m}$, ellipsoideis, leniter compressis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis $17\text{--}21.5 \times 6.8 \mu\text{m}$, tetrasporis. Cystidiis $24\text{--}41 \times 8 \mu\text{m}$, ventricososubfusoides vel ventricosomucronatis, hyalinis, tenuitunicatis. **Hyphis** tramatis hymenophoralis regularis filamentosis atque frequenter inflatis (usque ad $16 \mu\text{m}$), hyalinis, inamyloideis vel partim vix pseudoamyloideis, fibulatis, in stipite parallelis. **Epicute pilei** e dermatocystidiis erectis et ascendentibus efformata, his $22\text{--}38 \times 8.5\text{--}21.8 \mu\text{m}$, ventricosis, obtusis, tenuitunicatis, hyalinis vel e pigmento vacuolari coriicolori-fuscis, haud hymeniformiter dispositis. Hypodermio cutiformi, dermatocystidiis pigmentatis, concolori. Tegumento stipitis e dermatocystidiis (aut pilis) versiformibus (vesiculososis, ventricosis, filiformibus) densis, interdum subhyalino tenuiter incrustatis.

Ad lignum emortuum frondosum in silvis altis umbrosis, gregatim.

TYPUS—China, Yunnan, in monte Yünschan, prope Wukang 1150 m alt., *Handel-Mazzetti, Iter Sinense no 11.207* (WU).

This species had been identified by Keissler as "*Omphalia martensii* Henn. (vel affinis)" but was not compared with the type of that species. It is indeed similar to the description of *O. martensii* from West Borneo, but the latter has triangular lamellae and is certainly different from all species of sect. *Hydropus*. *Hydropus brunnescens* (Murr.) Sing. and *H. omphaliformis* Sing. appear to be related to our South Chinese species.

Dennisiomyces fuscoalbus Sing., spec. nov.

Pileo fusco ("santos" M&P), centro atrobrunneo ("cattail" M&P), leniter pellucide striatulo ad marginem, glabro vel subglabro, haud viscido, levi, ad marginem extremum plerumque albedo, convexo, umbonato, demum circum umbonem applanato vel subdepresso, 28–45 mm lato. **Lamellis** albis, confertis vel subconfertis, latis, angustissime adnexis vel sinuato-subliberis. **Stipite** albo, glabro vel ad apicem aut/et basin leniter fibrillosulo, interdum innate fibroso, levi, cavo, aequali, 41–44 × 2.5–5 mm. **Carne** alba, immutabili, odore nullo, sapore miti.

Sporis 5.7–7 × 3.7–5 μm, ellipsoideis, levibus, amyloideis. **Hymenio:** Basidiis 22–25 × 6–7.5 μm, tetrasporis, clavatis; basidiolis haud fusoides. Cystidiis ad aciem et latera lamellarum numerosis, (27–)45–65 × (9.5–)10–18 μm, fusoides-ventricosus, rarius ventricosus vel ventricosus-subampullaceis, tenuitunicatis, hyalinis, plerumque subopacis, emergentibus, e tramate hymenophorali natis. **Hyphis** hyalinis, haud gelatinosis, subintertextis, filamentosis, ± 3–5 μm latis sed multis inflatis usque ad 20 μm diam., fibulatis, inamyloideis. Tramate hymenophorali regulari, ex hyphis 2–10 μm latis, parallelis, cylindraceis vel filamentosis, hyalinis, haud gelatinosis efformato. **Epicute pilei** trichodermiali, ex hyphis, quarum cellula terminalis dermatocystidium repraesentat, efformata; dermatocystidiis numerosissimis 21–26 × 6.5–8 μm, versiformibus (saepe ampullaceis vel clavatis), tenuitunicatis; hyphis ascendentibus, hinc inde subintertextis. Hypodermio cutiformi, strato superiore tenui excepto, ubi hyphae multiseptatae sunt et in epicutem trichodermialem transeunt, omnibus 7–11.2 μm latis, sepiaceo-spadicis e pigmento intraparietali et incrustante.

Omnibus partibus carpophori cum solutione phenolica (2%) immutabilibus (reactione negativa).

Ad terram in silvis secundariis gregatim.

TYPUS—Brazil, Amazonas, Manaus, 29 VI 1977, *Singer B 9896* (INPA).

Because of the more than 6 μm large spores, the color of the pileus (which is not gray), the hollow stipe, the nondifferentiated cheilocystidia, and the tetrasporous basidia, this Amazonian species reminds one of *D. fulvidiscus* (Murr.) Sing. Both these species differ from *Hydropus umbonatus* (Peck) Sing. in broader spores (over 3.5 μm broad), in-

crusted (in *H. fulvidiscus* weakly) hyphae of the cuticle, and the absence of a pseudorrhiza.

Dennisiomyces rionegrensis Sing., spec. nov.

Pileo fusco ("chukker Br" M&P), centro sepiaceo ("autumn" M&P), per 10 mm a margine pellucide striato vel sulcolato, glabro, umbonato, ceterum convexo, dein applanato, 50–51 mm lato. **Lamellis** albis, confertis, latis, profunde sinuatis. **Stipite** albo, glabro, anguste cavo, subaequali vel lenissime attenuato apicem versus, ad basin frequenter curvato, haud radicante, 63 × 3–6 mm. **Carne** alba, inodora.

Sporis 5–5.8 × 3.8–4.7 μm, ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 26.5 × 6.8–8 μm, tetrasporis; basidiolis haud fusoides. Cystidiis metuloideis, numerosis ad aciem et latera lamellarum, 73–100 × 11–16 μm, utriforibus, constrictione supra medium 10.5–12 μm diam., apice rotundatis, apice excepto crassitunicatis, pariete hyalina, inamyloidea, levi, 1–1.7 μm crassa. Cheilocystidiis haud differentiatis. **Hyphis** hyalinis, tenuitunicatis, fibulatis, inamyloideis, haud gelatinosis. **Epicute pilei** ex hyphis repentibus et ascendentibus, filamentosis, 2.3–4 μm latis, pigmento intraparietali et subtiliter incrustante, fuligineo gaudentibus efformata; dermatocystidiis iacentibus vel erectis, brevibus vel elongatis, filamentosis vel subventricosus, obtusis, pigmento intraparietali fuscis, e. gr. 11–30 × 3–4 μm. Hypodermio cutiformi, ex hyphis frequenter ellipsoideis, usque ad 20 μm latis, pigmento intraparietali instructis efformato.

Ad folia putrescentia in silva tropicali solitario.

TYPUS—Brazil, Amazonas, prope viam Manaus-Caracaraí, km 45, in territorio EEST, 11 VI 1977, *Singer B 10071* (INPA).

The small spores, the thick-walled utriform cystidia and the rather small dermatocystidia are characteristic. In fresh condition an almost linear concentric zone is mostly present just inside the striate zone of the margin of the pileus.

Dermoloma aposcenum Sing., spec. nov.

Pileo cinereo (inter 5 A 8 et 5 A 9 M&P), centro siccando subsepiaceo, levi, glabro, haud viscoso, convexo, obtuso, 15–16 mm lato. **Lamellis** albidis,

siccando pallide alutaceis, subdistantibus, regulariter intermixtis lamellulis attenuatis, percurrentibus adnexis vel adnatis, vix sinuatis. **Stipite** dilute cinereo, in siccis obscuriore, haud viscoso, glabro, basin versus attenuato, 23×3 mm (ad basin ± 2 mm lato). **Carne** albida vel sordide alba, inodora.

Sporis $5.8-7 \times 4-4.5$ μm , ellipsoideis, levibus, hyalinis, tenuitunicatis in ammonia, inamyloideis. **Hymenio:** Basidiis $21-25 \times 6-7$ μm , tetrasporis. Cystidiis et cheilocystidiis nullis. **Hyphis** inamyloideis, hyalinis vel fuscidulo-hyalinis, fibulatis, haud gelatinosis, inamyloideis; tramate hymenophorali regulari, hyphis filamentosis vel moderatim dilatatis (e. gr. $\times 6$ μm). **Epicute pilei** hymeniformi, ex elementis vesiculosi, $14-18$ μm diam., ex integro vel in parte inferiore sepiaceo-fuliginosis ex pigmento intraparietali efformata.

Ad humum in silva tropicali pluviali solitario.

TYPUS—Mexico, Veracruz, Estación Biológica Los Tuxtlas, 28 VII 1969, *Singer M 8708* (F).

***Dermoloma pataguae* Sing., spec. nov.**

Pileo atrofusco, ad marginem albo, levi, velutino, subapplanato, 12 mm lato. **Lamellis** albido-griseolis, ventricosis, subconfertis, ad latera costatis et plerumque leniter anastomosantibus, sinuatis, anguste adnexis. **Stipite** griseolo-albo, sericeo-fibrilluloso fibrillis albis, 40 mm longo. **Carne** albida; odore et sapore haud notabilibus.

Sporis $6-9 \times 3-4.8$ μm , cylindraceutis vel ellipsoideis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis $26-28 \times 6-7$ μm , plerumque tetrasporis sed nonnullis 1-2-sporis. Cystidiis nullis. Cheilocystidiis paucis et inconspicuis, filiformibus, hyalinis, e. gr. 19×3 μm . **Hyphis** inamyloideis, fibulatis. Hymenophori tramate regulari, hyalino, ex hyphis $3-5$ μm latis, densis, intertextis efformato. **Epicute pilei** hymeniformi, ex elementis $19-46 \times 6.8-21$ μm , levibus, pigmento intraparietali atrosepiaceo instructis efformata.

Ad terram inter folia dejecta *Myrceugeniae planipedis* Berg. ("patagua") solitario.

TYPUS—Chile, Colchagua, Pumanque, 7 VIII 1967, *Lazo PU-130* (SGO).

This species has been indicated as possibly a variant of *D. josserandii* Dennis & Orton (Nova Hedwigia Beih. 29: 145. 1969), which however

differs considerably in broader spores, strong taste and adnate lamellae.

***Xeromphalina tropicalis* Sing., spec. nov.**

Pileo ferrugineo-brunneo vel aureo-brunneo ("Alamo" vel "Hispano" M&P), glabro haud viscido, pellucide striato et sulcato per medium radium, convexo, centro depresso, umbilicato, $3.5-4.5$ mm lato. **Lamellis** dilute flavis, mediocriter distantibus vel subdistantibus, horizontalibus, latis, decurrentibus. **Stipite** castaneo, subtiliter pruinato, aequali, interdum apice dilatato, curvato plerumque excentrico vel subexcentrico, $3-5 \times 0.2-0.3$ mm. Mycelio basali fibroso, radiante, flavo, siccando fulvescente, abundante. **Carne** flavido-pallida, tenui, inodora, sapore miti.

Sporis $4-5.3 \times 2.2-3.7$ μm , ellipsoideis, levibus, hyalinis, fortiter amyloideis. **Hymenio:** Basidiis $14-16 \times 4-4.5$ μm , tetrasporis. Cystidiis ad aciem et latera lamellarum $22-24 \times 4-5.5$ μm , fusoides, rarius cylindraceutis, frequenter mucronatis, raro clavatis, hyalinis, tenuitunicatis, haud incrustatis, inamyloideis. **Hyphis** inamyloideis, fibulatis. **Epicute pilei** e dermatocystidiis sparsis efformata, his cystidiis simillimis, e. gr. 17×4.5 μm , sed frequentius anguste clavatis, hinc inde hyphis ascendentibus hypodermii intermixtis. Hypodermio cutiformi, haud gelatinoso, ex hyphis tenuiter vel crassiuscule tunicatis, subtiliter ferrugineo-incrustatis efformato. Tegumento stipitis e dermatocystidiis eis pilei simillimis efformato.

Ad trunci corticem putrescentem in silva tropicali gregatim sed haud fasciculatim.

TYPUS—Brazil, near road Manaus-Itacoatiara, km 21, 18 XI 1978, leg. *Izonete Araujo Aguiar and Maria A. de Souza*, *Singer B 11427* (INPA).

Other eccentric species of *Xeromphalina* are *X. helbergeri* Sing. and *X. curtipes* Hongo. The latter species has trimorphic, densely crowded cystidia and close, later subclose lamellae, while *X. helbergeri* has smaller and narrower spores (to 2.7 μm broad) and cystidia and larger carpophores than *X. tropicalis*.

***Xeromphalina yungensis* Sing., spec. nov.**

Pileo flavo ("Ta Ming" vel "Spanish Y" M&P), centro ferrugineo-brunneo ("Alamo" M&P), stria-

to, glabro, haud vel vix hygrophano, late conico vel convexo, dein magis repando, umbonato vel obtuso, haud umbilicato, 6–10 mm lato. **Lamellis** quam pileus dilutius flavis ob aciem albidam, confertis vel subconfertis vel mediocriter confertis, haud intervenosis nec anastomosantibus, adnatis, rarius subdecurentibus, in vegetis interdum secedentibus. **Stipite** ferrugineo-brunneo (“Alamo”), pruina subfurfuracea fulvo-brunnescente, sed ad apicem stipitis albida oblecto, aequali, haud bulboso, 14–28 × 0.7–1 mm. Mycelio basali ascendente, brunneo-fulvo. **Carne** superficiebus pallidior, immutabili, tenui, inodora, sapore in siccis miti.

Sporis 3.8–4.5 × 1.8–2 μm, ellipsoideis vel cylindraceis vel oblongis, levibus, hyalinis, amyloideis. **Hymenio:** Basidiis 12–16 × 3–4 μm, tetrasporis. Cystidiis ad aciem lamellarum numerosis, ad latera admodum sparsis, 12–25 × 3–6 μm, fusoides, aut integris aut apicaliter uni- vel pluri-appendiculatis, appendiculis interdum bifurcatis, raro appendiculis lateralibus uno vel duobus ornatis, hyalinis, firme vel crassiuscule tunicatis. **Hyphis** inter hypodermium et zonam supralamellarem NaOH ope badio-rubescens, tenuiter vel crasse tunicatis, fibulatis, inamyloideis. **Epicute pilei** e dermatocystidiis raris vel sparsis, 19 × 5.5 μm, cylindraceis, pedicellatis, brunneolis vel ferrugineis efformata. Hypodermio tramate pilei pallidior (KOH), cutiformi. Tegumento stipitis e pilis cystidiformibus efformato, his admodum versiformibus, aut integris et levibus apice rotundatis aut apice bi- vel tri-furcatis et frequenter ramulis lateralibus ornatis, pariete subcrassiuscula, flavida vel brunnea instructis, 15–40 × 5–10 μm efformato.

Ad lignum Angiospermarum in silva tropicali-montana gregatim.

TYPUS—Bolivia, La Paz, Nor-Yungas, Carmen Pampa, 1 II 1956, *Singer B 795* (F).

This species differs from *X. caulicinalis* (With. ex Fr.) Kuhn. & Maire in smaller spores, smaller cystidia, and habitat.

Baeospora mundula Sing., spec. nov.

Pileo albo (interdum partim chromeo-flavo), haud viscido, levi, convexo, umbonato, 9–10 mm lato. **Lamellis** albis, angustis, confertissimis, adnatis vel vix decurrentibus. **Stipite** albo, admodum subtiliter pruinoso, macroscopice glabro, ae-

quali, stricto, verticali, interdum excentrico, 19–20 × 1–1.2 mm. Velo nullo. Mycelio basali submembranaceo, albo vel alutaceo-albo. **Carne** alba, immutabili, inodora, sapore miti.

Sporis 3.3–4.7 × 2.3–3.5 μm, ellipsoideis vel subglobosis, ad apicem rotundatis, raro acutis, tenuitunicatis, levibus, hyalinis, amyloideis, acyanophilis. **Hymenio:** Basidiis 15.5–21.3 × 4.7–5.3 μm, tetrasporis. Cystidiis nullis vel prope aciem cheilocystidiis simillimis. Cheilocystidiis numerosis, 15.3–23 × 4.7–8 μm, ventricosis vel clavatis vel ampullaceis vel utrififormibus, raro vesiculososis, simplicibus, raro prope basin bifurcatis, tenuiter vel firme tunicatis, hyalinis, haud incrustatis. **Hyphis** inter septa longis, hyalinis, usque ad 13.5 μm latis, in stipite parallelis, inamyloideis, fibulatis, haud gelatinosis. **Epicute pilei** e dermatocystidiis efformata, his cheilocystidiis simillimis. Hypodermio cutiformi, hyalino, hyphis supernis filamentosis et excrescentia exigua in epicutem (inter dermatocystidia) emittentibus, Tegumento stipitis e dermatocystidiis numerosis efformato, his aut cylindraceis aut cheilocystidiis simillimis, cylindraceis ad basin dilatatis, superne 5–6 μm latis, interdum apicaliter unciformiter appendiculatis, hyalinis, tenuitunicatis, 33–37 × 10.5–11 μm.

Ad lignum dicotyledoneum putrefactum in silva tropicali typi igapó (inundabili), solitario.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 14 V 1980, *Singer B 12168* (INPA).

Baeospora pallida Sing. is related.

Fayodia metuloidigera Sing., spec. nov.

Pileo brunneo vel atrobunneo, subtiliter pectinato vel radiatim innate fibrilloso, sed glaberrimo, convexo, rarius obtuso, plerumque papillato, 10–13 mm lato. **Lamellis** albis, latis, moderatim confertis vel subdistantibus, ad aciem albam sub lente pubescente-fimbriatis, sinuatis. **Stipite** albedo, frequenter partim brunnescente, sub lente pubescente, levi, subaequali vel leniter apicem versus attenuato, 30–31 × 1–1.5 mm. **Carne** alba, inodora.

Sporis 6.5–7.5 × 5–6.5 μm, subglobosis, episporio aculeis subtilibus perforato et sub perisporio externo levi aculeolato (typi XI sub photomicroscopio), hyalinis, inamyloideis. **Hymenio:** Basidiis tetrasporis. Cystidiis ad latera lamellarum 70–105 × 7–18 μm, metuloideis, fusoides vel ampullaceis, crasse tunicatis sed ad apicem et basin ten-

uitunicatis, apice interdum bilobatis, subacutis vel obtusis, hyalinis vel pallide stramineis, (pariete 1.5–5 μm crassa), inamyloideis, sed linea rosella ad superficiem internam parietis in solutione Melzeri discernibili. Cheilocystidiis differentiatis, forma et magnitudine pleurocystidiis similibus, sed tenuitunicatis vel firme tunicatis ex toto, frequenter semel vel bis constrictis, apice interdum claviculatis. **Hyphis** fibulatis, inamyloideis; tramate hymenophorali regulari; stratis gelatinosis nullis. **Epicute pilei** cutiformi; dermatocystidiis nullis. Tegumento stipitis e dermatocystidiis cystidiis hymenialibus simillimis efformato.

Ad truncum alneum (*Alnus jorullensis* H. B. & K.) vivum in silva montana (Alnetum), solitario.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 9 II 1965, *Singer T 3910* (F).

This species differs from all species of *Fayodia* subg. *Heterosporula* in thick-walled cystidia, except perhaps *F. xerophila* Luthi & Rollin (cf. Bull. Soc. Myc. Fr. 88, plate after p. 172, figures c.f. 1972); but, having studied the type myself, I am inclined to think that the thickness of the wall in these figures has been exaggerated.

Cyptotrama niveum Sing., spec. nov.

Pileo niveo-albo, haud viscido, minute pruinato vel subtomentoso, levi, margine incurvo, convexo, obtuso, 5 mm lato. **Lamellis** albis, moderatim confertis, subcrassiusculis, arcuatis, subdecurrentibus vel decurrentibus. **Stipite** albo, in vegetis subsericeo, in siccis sub lente ad apicem pruinoso, basin versus leniter tomentoso, sicco, aequali, 16 \times 1.3 mm. **Carne** alba, immutabili, inodora.

Sporis 10.5–16.8 \times 6.7–9.3 μm , ellipsoideis, tenuitunicatis, hyalinis, levibus, inamyloideis. **Hymenio**: Basidiis 25–31 \times 8–13 μm , tetrasporis. Cystidiis veris nullis. Pseudocystidiis gloecystidialibus 35–47 \times 8–12 μm , numerosissimis, clavato-ventricosis vel utriformibus, in solutione Melzeri subopacis, tenuitunicatis, inamyloideis, azurei cresylici ope contentu vermiformi vel granulari caerulescente sed pariete tenui haud roseola, in KOH contentu guttato vel paullum visibili repletis. Cheilocystidiis differentiatis haud visis. **Hyphis** hyalinis, fibulatis, inamyloideis, oleiferis (vel gloeo-vasculis?) intus azurei cresylici ope caeruleo-granulosis (sed multis haud manifeste granulosis), longissimis intermixtis. Tramate hymeno-

phorali laterali, neque in strato laterali nec in mediostrato gelatinoso. **Epicute pilei** e palisada dermatocystidiorum erectorum efformata, his gloecystidialibus, (30–)40–67 \times 6.5–9 μm , clavatis vel cylindraceis, rarius fusoides, tenuitunicatis, hyalinis (KOH), contentu in solutione Melzeri leniter guttato, in solutione azurei cresylici incrustatis et intus corpusculis vermiformibus vel amorphis caerulescentibus instructis, apice integro rotundatoque vel duobus vel quatuor appendiculis digitiformibus vel sterigmatoideis praeditis; epicute tramatibusque numquam gelatinosis. Tegumento stipitis e dermatopseudocystidiis eis pilei simillimis efformato sed his basin versus raris vel nullis. Ad folia delapsa in silva tropicali typi igapó (inundabili), solitario.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 19 III 1980, *Singer B 12039* (INPA).

This species belongs in sect. *Cyptotrama* and is remarkable because of the absence of pigments in the carpophore.

Cyptotrama pauperum Sing., spec. nov.

Pileo primum rubro (2 L 8 M&P), dein roseo (“begonia,” margine 2 J 8 M&P), nec viscido neque hygrophano, glabro vel leniter appresse vel innate fibrilloso radiatum, convexo, dein convexo vel repando-subapplanato, umbilicato, 8–37 mm lato. **Lamellis** albis, mediocriter latis, rarius sublatis, confertis, adnatis. **Stipite** roseo (“springtime,” dein “coral pink” M&P), apice pallido vel albo, glabro sed ad apicem extremum sericeo, haud viscido, tubuloso, aequali vel leniter attenuato apicem versus, 16–38 \times 1–2.5 mm. Mycelio basali sericeo, albo. **Carne** albidata vel pallidata vel alba, tenui, fragili, inodora.

Sporis 9.5–12 \times 4.7–5.3 μm , fusoides vel oblongis, depressione suprahilari praeditis, pariete sat firma, haud crassa, homogena, levi instructis, hyalinis, inamyloideis, gutta globosa centrali oleaginosa munitis. **Hymenio**: Basidiis 37–40 \times 8–8.5 μm , tetrasporis; basidiolis haud fusoides, septo basali simplici. Cystidiis nullis. Cheilocystidiis numerosis sed inconspicuis, 17–26 \times 4.5–8.5 μm , clavatis, rarius utriformibus, subbasidiomorphis, tenuitunicatis, hyalinis. **Hyphis** hyalinis, tenuitunicatis, defibulatis. Tramate hymenophorali bilateralis, haud gelatinoso, hyalino, ex hyphis filamentosis (2–3 μm latis) et inflatis (9–10 μm latis) efformato, demum subregulari, strato laterali lax-

iore mediocrato. **Epicute pilei** intermittente, rudimentario, hymeniformi, fugaci, ex elementis dermatocystidiformibus efformata, his cheilocystidiis simillimis. Hypodermio cutiformi, ex hyphis filamentosis vel inflatis (3–9 μm latis), pigmento rubro incrustatis (NH₄OH, KOH) efformato et, ubi epicutis interrupta, hyphas 4–10 μm latas ascendentes emittente, similiter pigmentatas et interdum hymenio superficiali immixtas.

Ad truncum lapsum arboris dicotyledoneae in silva typi terrae firmae, gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Itacoatiara km 65, 6 X 1977, leg. Maas, *Singer B 10180* (F).

This species is related to *C. hygrocycloides* Sing., from which it differs in the absence of pleurocystidia.

AMANITACEAE Roze

Limacella grisea Sing., spec. nov.

Pileo griseo (siccato "racquet" M&P, centro obscuriore), viscido, glabro, levi, convexo, obtuso, 40–60 mm lato. **Lamellis** albis, confertissimis, liberis, haud lacrimantibus. **Stipite** albo, floccoso, siccato aequali, basi saepius incrassato nec bulboso, 45–75 \times 7–10 mm. Annulo albo, apicali, in parte affixa superiore leniter sulcato-striato. **Carne** alba; odore vix notabili.

Sporis 4.5–6 \times 4.5–5 μm , globosis vel subglobosis, subhyalinis, levibus, tenuiter vel firme tunicatis, inamyloideis. **Hymenio**: Basidiis 20–30 \times 5.5–7.5(–8.5) μm , tetrasporis. Cystidiis nullis. Cheilocystidiis nullis. **Hyphis** inamyloideis, plerumque fibulatis, septis secundariis numerosis. **Epicute pilei** 15–25 μm alta, ixocutiformi, ex hyphis filamentosis tenuitunicatis, in KOH hyalinis, 0.5–2 μm latis efformata. Hypodermio ex hyphis latoribus, pigmento admodum diluto intracellulari instructis, haud incrustatis efformato (KOH). Ex hyphis hypodermialibus nonnullis dermatocystidiis natis sed in speciminibus juvenilibus tantum visibilibus, his 18–35 \times 8.5–9.5 μm , ventricosis, hyalinis, tenuitunicatis, pedicellatis, per epicutem perfringentibus, sparsis vel raris, fugacibus. Superficie stipitis partim haud gelatinosa, partim minime subgelatinosa hyphis 2.5 μm latis obiecta.

Ad humum et terram in Pinetis arenosis litoralibus gregatim.

TYPUS—Spain, Catalonia, Prat de Llobregat, 23 X 1979, *Singer C 9595* (F).

PLUTEACEAE Roze

Volvariella arenaria (Pat.) Sing., comb. nov.

BASIONYM—*Pluteus arenarius* Pat., Rev. Mycol. 13: 136. 1891.

Volvariella macrospora Sing., spec. nov.

Pileo grisello-pallido, hygrophano, haud viscido, appresse sericello, mox concavo, 10 mm lato. **Lamellis** roseolis, confertis, liberis. **Stipite** albo, glabro, filamentoso-aequali, 21 \times 0.7 mm. Annulo nullo. Volva cupuliformi, grisea. **Carne** alba, inodora.

Sporis 13–14.5 \times 8.5–9.5(–11) μm , ellipsoideis, levibus, roseo-stramineis. **Hymenio**: Basidiis tetrasporis. Cystidiis e. gr. 40 \times 16 μm , saccatis vel ventricosis, tenuitunicatis, hyalinis. **Hyphis** haud gelatinosis, hyalinis, fibulatis. Tramate hymenophorali inverso. **Epicute pilei** cutiformi, ex hyphis latis, septis distantibus et haud gelatinosis efformata.

Ad terram argillosam ad marginem viae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 11 V 1977, *Singer B 9863* (F).

The combination of voluminous spores and small carpophores makes this new species unique among the *Volvariellas* described until now.

Volvariella psammophila Sing., spec. nov.

Pileo griseo in disco, ceterum argenteo-grisello et mox subtiliter rimuloso (carnem albam exponente), sulcato, radiatim sericello, centro subglabro, convexo, obtuso, 8–45 mm lato. **Lamellis** roseocarneis, latis, subconfertis vel confertis, liberis. **Stipite** albo, glabro, aequali, solido, 17–41 \times 2–4

mm. Annulo nullo. Volva cupuliformi, lobata vel sublobata, grisea, intus alba. **Carne** alba, inodora.

Sporis 6.2–7.3 × 4.5–5.5 μm, ellipsoideis, depressione suprahilari destitutis, roseolo-stramineis, levibus. **Hymenio:** Basidiis 18–19 × 8–9 μm, tetrasporis et bisporis. Cystidiis 26–50 × 16.5–17.3 μm, subvesiculosus vel ventricosus, hyalinis, tenuitunicatis, frequenter corpusculo interno instructis, numerosis. **Hyphis** fibulatis, nonnullis subsphaeroideis. **Epicute pilei** cutiformi ex hyphis repentibus, levibus efformata.

Ad terram arenosam inter quisquilias vegetales locis semiumbrosis, subxerophyticis vel mesophyticis, gregatim.

TYPUS—Argentina, Buenos Aires, Parque Ezeiza, 1966 leg. *Havrizco, Singer S 703* (BAFC).

Volvariella taylori (Berk.) Sing. is related.

Volvariella rondoniensis Sing., spec. nov.

Pileo pallide murino, ad marginem dense ± pectinaceo vel subrimuloso, glabro, haud viscoso, obtuse conico, 35 mm lato. **Lamellis** roseolis, confertis, liberis. **Stipite** albo, glabro, aequali, 68 × 3.5 mm. Volva sordide albidula, tenuimembranacea, sericea, applicata. **Carne** alba, immutabili, molli, inodora.

Sporis 9–11 × 6.3–7 μm, sordide roseis, pariete ± 0.5 mm crassa, levi, fragili instructis, ellipsoideis. **Hymenio:** Basidiis 28–30 × 10.5–11 μm, tetrasporis, septo basali defibulatis. Cystidiis 35–85 × 18–30 μm, saccatis vel subvesiculosus, hyalinis, tenuitunicatis, collabentibus, sat numerosis. Cheilocystidiis bene differentiatis, 35–58 × 15.5–18 μm, ventricosus-saccatis, plerumque appendiculo apicali longo, raro brevi, 15–32 × 2.5–5.5 μm, interdum sub apice inflato vel ad apicem capitato ornatis, ceterum pleurocystidiis similibus. **Hyphis** hyalinis, defibulatis, haud gelatinosis. **Epicute pilei** cutiformi, hyphosa.

Ad lignum putridum arboris dicotyledoneae in silva typi terrae firmae submontanae solitario.

TYPUS—Brazil, Rondônia, Ouro Preto, 17 IV 1978, *Singer B 10969* (INPA).

The shape of the pileus, the medium-sized spores, the rostrate cheilocystidia, and simple septa are characteristic for this Amazonian species.

Volvariella subxerophytica Sing., spec. nov.

Pileo griseolo-ochraceo, haud sulcato, fibris (“thrush” M&P) subradialibus, subrimoso-applicatis obtecto, centro rugoso, 14 mm lato. **Lamellis** sordide roseolis-rutilis, sat latis, subconfertis, liberis. **Stipite** pallido, filamentoso, glabro, aequali, 15 × 1–1.5 mm. Volva brunnea dein pallidiore, membranacea, cupuliformi, saepe lobata, vix tomentosa. **Carne** inodora.

Sporis 6.8–8.5 × 4.5–5.5 μm, ellipsoideis, levibus, roseolo-stramineis. **Hymenio:** Basidiis 18–27 × 7.5–9.5 μm, ventricosus vel clavatis, tetrasporis. **Hyphis** defibulatis, hyalinis, filamentosis et inflatis visis. Tramate hymenophorali inverso, hyalino. **Epicute pilei** hyphosa, cutiformi, in KOH subhyalina.

Ad terram interdum ligno putridissimo et arenis mixtam, locis apricis in vegetatione subxerophytica typi “Monte” solitario vel gregatim.

TYPUS—Argentina, Tucumán, Pié de Periquillo, 900 m alt., 30 XII 1951, *Singer T 1687* (LIL, “*V. taylori*”). Additional collection: Argentina, Catamarca, Santa María, near Río Santa María, 27 I 1962, *Singer T 3752-3769* (LIL).

This species is related to *V. taylori* (Berk.) Sing. and *V. psammophila* Sing.

Pluteus amazonicus Sing. ex Sing., spec. nov.

Pileo fusco-griseo, margine pallide sordideque griseo, siccando gradatim obscuriore, fuligineo vel sepiaceo (e. gr. “bracken” M&P), margine fusco (“clove” M&P), saepe albido prope marginem, granulis densis, marginem versus gradatim sparsis obsito, per medium radium sulcato, convexo, papillato, 2.5–3 mm lato. **Lamellis** pallide roseolis, acie pallide roseolis et subfimbriatis, dein sordide roseis, latis vel latissimis, ventricosus, confertis vel subconfertis, liberis. **Stipite** albo vel pallido, albo-sericeo et sub lente pubescente, aequali vel ad basin incrassato, 7 × 0.2 mm. **Carne** tenuissima, alba, inodora.

Sporis 6–7.7 × 4.8–7 μm, breviter ellipsoideis (e. gr. 7 × 5.5 μm) vel frequentius subglobosis, levibus, roseolo-stramineis. **Hymenio:** Basidiis 18–30 × 7–9(–10) μm, plerumque ventricosus, tetrasporis. Cystidiis 20–50 × 12–16.5 μm late ventricosus vel subampullaceo-utriformibus vel subampullaceo-fusoides, obtusis, hyalinis, tenuitunicatis.

Cheilocystidiis similibus, sed late ventricosis vel subvesiculosus tantum, $20\text{--}50 \times 7.5\text{--}20 \mu\text{m}$. **Hyphis** hyalinis, defibulatis. **Epicute pilei** fragmentato-hymeniformi, hymenio ex elementis pro ratione paucis vesiculosus $20\text{--}24 \times 12\text{--}21 \mu\text{m}$ atque dermatocystidiis numerosis $27\text{--}50 \times 8\text{--}21 \mu\text{m}$ eformatis, ambobus forma cheilocystidiis similibus, sed pigmento dissoluto vacuolari fuscidulo impletis. Dermatocystidiis stipitis hyalinis vel subhyalinis.

Ad stipulas ligneas ramulosque dicotyledoneos delapsos in silvis tropicalibus typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 10 X 1977, *Singer B 10187* (INPA). Additional collection: Bolivia, Beni, Vaca Diez, Guayaramerín, 5 III 1956, *Singer B 1587* (LIL). See description in *Lloydia* 21: 260. 1958 (invalid).

Pluteus exilis Sing., spec. nov.

Pileo typice umbrino, umbrino-brunneo, (sed interdum griseo-brunneo variante), haud viscoso, innate radiatum fibrilloso sed glabro, nudo, estriato, haud sulcato, interdum leniter concentric costulato, convexo, dein vel demum applanato, plerumque subumbonato, rarius obtusissimo, haud prominenter umbonato, $35\text{--}50$ mm lato. **Lamellis** roseis, acie roseis, rarius lenissime fuscidulis ad aciem, latis (moderatim latis vel latissimis), confertis, liberis. **Stipite** pallido, umbrino- vel griseo-brunneo-fibrilloso vel fibrilloso-reticulato ut minime in parte inferiore stipitis, solido, aequali vel gradatim e basi apicem versus attenuato sed haud bulboso, $44\text{--}60 \times 3.5\text{--}5$ mm ad apicem, ad basin saepe usque ad 9 mm incrassato. **Carne** alba, immutabili; sapore miti; odore nullo notabili vel leniter terreo-farinoso.

Sporis $(6\text{--}7\text{--}8\text{--}8.3) \times 4.5\text{--}5.5\text{--}(6.5) \mu\text{m}$, versiformibus, plerumque ellipsoideis vel ovoideis vel cylindraceutis, levibus, roseolo-stramineis. **Hymenio**: Basidiis $20\text{--}32 \times 7\text{--}9.5 \mu\text{m}$, tetrasporis. Cystidiis metuloideis dimorphis, (1) ad et prope acies lamellarum, typi Magni vel inter typum Magni et Cervini intermediis, ventricosus-fusoideis, acutis vel bis sterigmatoideae ad apicem appendiculatis, aequaliter firme vel crassiuscule tunicatis, $50\text{--}85 \times 15\text{--}30 \mu\text{m}$; (2) ad aciem et latera lamellarum, typi Cervini, ventricosus vel ampullaceus, apice obtuso sed $2\text{--}3\text{--}4$ -appendiculatis, appendiculis corniformibus, strictis vel rarius recurvatis, acutis vel obtusis, brevibus vel elongatis, pariete e medio

apicem versus $1.2\text{--}2.3 \mu\text{m}$ crassa, basin versus gradatim attenuata, his cystidiis $60\text{--}100 \times 13\text{--}30.5 \mu\text{m}$. Cheilocystidiis dimorphis, (1) brevibus, $15\text{--}30 \times 10\text{--}20 \mu\text{m}$, ventricosus-subvesiculosus, tenuitunicatis, hyalinis, apice late rotundatis, (2) elongatis, $30 \times 54 \times 7\text{--}21.5 \mu\text{m}$, ceterum similibus. **Hyphis** defibulatis. Tramate hymenophorali inverso. **Epicute pilei** cutiformi, ex hyphis $9\text{--}13.1 \mu\text{m}$ latis, repentibus, haud gelatinosis; pigmento brunneo, dissoluto, vacuolari.

Ad truncos emortuos *Lithocarpi* gregatim.

TYPUS—USA, California, Muir Woods (Marin Co.), 14 I 1983, *Singer N 5105* (F).

Var. *exilis* pileo umbrino-brunneo, ad lignum *Lithocarpi* in California occurrit.

Var. *austriacus* Sing., var. nov. A var. *exili* differt pilei colore griseo-fusco, habitatione ad *Quercum* et area (europaea).

TYPUS—Austria, Burgenland, Siegendorf, 19 IX 1979, *Singer C 9457* (WU). Additional collections: Steinbachgraben, Wiener Wald, 7 IX 1907, *Höhn* (FH); Rekawinkel, 28 IX 1902, *Höhn* (FH).

This species differs from *P. atricapillus* (Batsch ex Secr.) Sing. in dimorphic cheilocystidia and the absence of superficial dark fibrils on the pileus as well as in the thin stipe which hardly ever reaches 10 mm in diameter. It is closely related to *P. xylophilus* (Speg.) Sing. from South America. The latter has smaller spores, the carpophore being more variable in size, and grows on wood but never on Fagales.

Pluteus glutinosus Sing., spec. nov.

Pileo dilute brunneo, sicco obscurius fusco, pellucide striato vel substriato ad marginem, sed vix innate fibrilloso, glutinoso, convexo, demum convavo, obtuso, haud umbilicato, $20\text{--}25$ mm lato. **Lamellis** albis, dein (in siccis) griseolo-roseis, latis vel moderatim latis, confertis vel subconfertis, liberis. **Stipite** albo, siccando fuscescente, glabro, gracili, aequali, in siccis $25\text{--}40 \times 1\text{--}2$ mm. **Carne** alba.

Sporis $6\text{--}7.5 \times 4\text{--}5.5 \mu\text{m}$, plerumque $6\text{--}7 \times 4\text{--}4.8 \mu\text{m}$, breviter cylindraceutis vel ellipsoideis vel ovatis, rarius breviter ellipsoideis, angustioribus saepe ad latus interius depressis, pallide roseolo-stramineis, levibus. **Hymenio**: Basidiis $19\text{--}29 \times 5\text{--}7 \mu\text{m}$, tetrasporis. Cystidiis metuloideis, om-

nibus typi Cervini modo ampullaceis, 40–75 × 13–25 μm, apice obtusis sed appendiculis apicalibus 1–4, plerumque ornatis (his brevibus, ± sterigmatoideis, 0.5–3 μm longis), pariete ad ipsum apicem crassa (0.5–3 μm), ceterum tenui instructis, hyalinis, numerosis ad latera et acies lamellarum. Cheilocystidiis e parte gelatinosa tramatis natis, 26–34 × 9–11 μm, subvesiculosus vel late clavatis, pedicellatis, aut 30–42 × 7–8.5 μm, proijcientibus, elongato-clavatis vel anguste ventricosis, omnibus hyalinis, tenuitunicatis. **Hyphis** fibulatis; hyphis oleiferis 5–13.5 μm latis. Tramate hymenophorali inverso, partim gelatinoso. **Epicute pilei** ixocuti-formi, ex hyphis 1–2(–4) μm latis, hyalinis vel subhyalinis efformata. Hypodermio cutiformi, haud gelatinoso, ex hyphis 5–10(–13.5) μm latis, fuscis efformato; pigmento frequenter colloidaliter condensato, vacuolari. Hyphis strati externi stipitis eis epicutis pilei similibus sed minus gelatinosis.

Ad truncum delapsum emortuum.

TYPUS—Panama, Panamá, near the El Llano-Carti road, 500–800 ft alt., 29 VI 1975, *Dumont P 1512* (NY).

Pluteus hongoi Sing., spec. nov.

Pileo griseo, sicco fusco (“teakwood” M&P), glabro, levi, nitido, ± viscido, subnitido in siccis, convexo, obtuso, 29 mm lato. **Lamellis** roseolis, confertis, latis, liberis. **Stipite** albo, demum ad basin leniter griseolo-sordido, Fibrillis atris innatis vel superficialibus destituto, levi, solido, aequali, 33 × 3.5 mm. **Carne** alba, immutabili, inodora.

Sporis 6.5–8.3 × (4.5–)5–6 μm, plerumque 6.5–7.7 × 5–5.3 μm, roseolis vel pallide roseolis, ellipsoideis, paucis lateraliter subreniformibus, multis applanazione vel depressione suprahilari instructis, levibus. **Hymenio**: Basidiis 23.5–29 × 6.5–7.5 μm, tetrasporis, fibula basali destitutis. Cystidiis metuloideis typi Cervini modo ampullaceis, ad aciem et latera lamellarum sat numerosis, 50–75 × 12–16 μm, in parte ventricosa pariete ± 1 μm crassa, ad apicem 1.5–2 μm crassa instructis, hyalinis, appendiculis spinosis vel obtusis 2–9 μm longis acutis vel obtusis, omnibus apicalibus ornatis. Cheilocystidiis 43–93(–110) × 5–12 μm, omnibus elongatis, filamentosis vel cylindraccis vel anguste ventricosis, apice generatim angustatis sed obtusis, interdum constrictis, ad apicem et in constrictione 2–5 μm diam. tenuitunicatis, numerosis. **Hyphis** defibulatis. Tramate hymenophorali inverso, hyalino. **Epicute pilei**

ixocuti-formi, ex hyphis leniter ascendentibus hyalinis, 2–6.5 μm latis, tenuitunicatis efformata. Hypodermio cutiformi, ex hyphis latioribus, plerumque fuscis, haud gelatinosis efformato; pigmento vacuolari, paucis in cellulis colloidaliter condensato, plerumque dissoluto.

Ad lignum emortuum dicotyledoneum in silva temperata, thermophila *Castanopsis* dominata.

TYPUS—Japan, Kyoto, Mt. Daimonji-yama, 14 IX 1984, leg. *Singer, Hongo et al.*, *Singer A 4070* (F).

Among the clampless species, this is characterized by gelatinous epicutis, metuloids of the *Cervinus*-type, and consistently elongated cheilocystidia.

Pluteus hylaeicola Sing., spec. nov.

Pileo sepiaceo-fuligineo (“bracken,” “moose,” “Cordovan” M&P), centro subnigro, et velutino et hispido, ceterum glabro vel subglabro, ut minime sub lente innate fibrilloso-flammeo et nitidiusculo in siccis adultis, interdum minutissime rimuloso, vix vel lenissime subhygrophano, haud rugoso, levi vel breviter sulcato, convexo vel late conico-obtuso, dein magis repando, plerumque subumbonato, 36–38 mm lato. **Lamellis** albis, dein roseolis, acie constanter vel in siccis tantum manifeste pileo concoloribus, moderatim latis vel sub-latis, confertis, liberis. **Stipite** argenteo-griseo vel dilute griseo vel ita appresse vel innate fibrilloso et albo-variegato, nec pruinoso nec flocculoso, aequali, ad basin plerumque incrassato sed haud bulboso, 38–69 × 3.3–4 mm, ad basin 5–7 mm lato. Mycelio basali albo. **Carne** alba, immutabili, inodora.

Sporis 6–8 × 5.3–6.8 μm, levibus. **Hymenio**: Basidiis 18–31 × 7.5–8.8 μm, ventricosis, tetrasporis. Cystidiis metuloideis typi Cervini tantum ventricosis vel ampullaceis, 52–76 × 11–33 μm, apicaliter (0–)1–5-appendiculis sterigmatoideis, raro breviter digitaliformibus, obliquis vel erectis, interdum bifidis, 1.5–8 × 1.5–5 μm, ornatis et pariete ad et prope apicem crassa (2.5–3 μm) atque medium et basin versus gradatim attenuata et ad basin tenui instructis, omnibus hyalinis. Cheilocystidiis dimorphis, (1) fortiter elongatis, 41.5–64 × 9.5–18 μm, subfusoides; (2) brevius ventricosoclavatis, 23–74 × 11–36 μm, plerumque 23–30 × 11–15 μm, illis (1) fuscidulis vel subhyalinis, his fuscidulis, raro subhyalinis, demum saepe sepi-

aceis, pigmento vacuolari. **Hyphis** fibulatis, interdum omnibus septis fibulatis, in aliis carpophoris nonnullis septis simplicibus notatis. Tramate hymenophorali inversa, demum cellulis prope subhymenium subsphaerocystiformiter inflatis, nullo modo gelatinosis. **Epicute pilei** in parte marginali pilei cutiformi, haud gelatinoso, ex cellulis applicatis $90\text{--}150 \times 6.5\text{--}12 \mu\text{m}$, apice obutis, tenuitunicatis efformata, in centro pilei his cellulis erectis, omnibus brunneolis, fuscidulis vel sepiaceis, pigmento vacuolari, dissoluto.

Ad lignum dicotyledoneum emortuum delapsum in silva typi terrae firmae (vel várzeae?).

TYPUS—Brazil, Pará, Belem, 5 VI 1966, *Singer B 4201* (BAFC). Additional collection: Brazil, Amazonas, 30 km N of Manaus, 12 VII 1978, *Singer B 12373* (INPA).

This species is related to *P. spegazzinianus* Sing. and *P. martinicensis* Sing. & Fiard in Pegler. It differs from the former in smaller size of the carpophores and more elongated cheilocystidia; from the latter in slender carpophores and absence of dermatocystidia forming flocculi on the stipe.

Pluteus kuthanii Sing., spec. nov.

Pileo colore *Plutei atricapilli* pigmentato, haud viscido, glabro, levi, nudo, per tres quartas partes radii pellucide striato, ± 50 mm lato. **Lamellis** roseolis acie roseolis, sat latis, confertis, liberis. **Stipite** albo, ad basin sordescente, ex integro glabro nec innate fibrilloso, sed longitudinaliter leniter aquose vibecino, elongato, aequali sed in parte inferiore gradatim basin versus incrassato, 115×5 mm, ad basin $11\text{--}12$ mm diam. **Carne** alba, inodora, sapore miti.

Sporis $6\text{--}7(7.2) \times 4.5\text{--}5.7(6) \mu\text{m}$, ovatis vel breviter ellipsoideis, rarius subglobosis, levibus. **Hymenio**: Basidiis $21\text{--}29 \times 7.5\text{--}9 \mu\text{m}$, ventricosis. Cystidiis $45\text{--}75 \times 12.5\text{--}23.5 \mu\text{m}$, tenuitunicatis, ampullaceis, collo aequali, raro leniter capiculato vel apicem rotundatum versus attenuato instructis, paucis appendiculis minusculis uno vel quatuor apicalibus ornatis, hyalinis. Cheilocystidiis $21\text{--}54 \times 8\text{--}19 \mu\text{m}$, versiformibus, plerumque fusideo-ventricosis vel subclavatis, frequenter tenuissime mucronatis, hyalinis. **Hyphis** tramatis pilei usque ad $40 \mu\text{m}$ latis, defibulatis. Tramate hymenophorali inverso, hyalino. **Epicute pilei** ex hyphis horizontalibus vel vix subascendentibus, parallelis, fusiformibus vel subclavatis, longissime

cellulatis, dilutissime pigmentatis, $4.5\text{--}23 \mu\text{m}$ latis efformato.

Ad humum in silva piceina (*Picea abies* Degen.) solitario.

TYPUS—Czechoslovakia, Slovakia, Čadca, Rakova, 27 VII 1974, leg. *J. Kuthan & Singer*, *Singer C 5696* (F).

This species is related to *P. depauperatus* Romagnesi, but is odorless and has different habitat. *Pluteus granulatus* Bres. which often occurs on conifer trunks differs in granular epicutis with different structure. *Pluteus atriavellaneus* Murr., which rather frequently shows colors very similar to *P. kuthanii*, differs in less variable cystidia, habitat, and distribution.

Pluteus major Sing., spec. nov.

Pileo $67\text{--}80$ mm lato, **stipite** albo, leniter albo-flocculoso-ruguloso in vegetis, vix manifeste aspero in siccis, $\pm 66 \times 8\text{--}8.5$, ad basin usque ad 12 mm lato. **Carne** alba, immutabili, leniter raphanodora, miti. Macroscopice *P. lilacino* (Mont.) Sing. similis sed major.

Microscopice *P. exili* Sing. simillimus est nec nota ulla distinguendus.

Ad truncum delapsum frondosum (quercinum?), \pm gregatim.

TYPUS—USA, Illinois, Forest Preserve E of Wheeling, 23 VI 1985, *Singer N 5195* (F). Additional collection: Elk Grove Village, 19 IX 1983, *Singer N 5128* (F).

This is a large fungus with \pm umbonate pileus, the umbo covered by erect fibrils, but it has white stipe. Similar forms with strongly scabrous stipe, but the fibrils dark colored as in *Leccinum scabrum* (Bull. ex Fr.) S.F. Gray, occur in Europe and seem to be “intermediate” between *P. major* Sing. and *P. exilis* Sing. They are inserted under a herbarium name (F: C 9473, C 5126, “*Pluteus scaber* ad int.”) and cannot be formally described, since their status is not fully clear to me. They might represent a European subspecies of *P. major*.

Pluteus melanopotamicus Sing., spec. nov.

Pileo fusco-griseo, centro atrogriseo, in siccis fuligineo (“biskra” vel 8 E 1 in centro, ceterum

"African" M&P), sicco, radiatum fibrilloso, fibrillis ad marginem innatis, in centro superficialibus, in umbone erecto-hispidis, atris supra fundamentum pallidius, densissimis ornato, convexo, umbonato, dein circum umbonem haud altum depresso, haud vel vix sulcato, haud rugoso, 42–52 mm lato. **Lamellis** sordide roseolis, sat latis, confertis, acie pallidis, liberis. **Stipite** albo, interdum ad basin griseolo, haud atro-fibrilloso, aequali, glabro, nudo, sicco, levi, 44–65 × 3–4 mm. **Carne** alba, immutabili, inodora.

Sporis dimorphis, (1) 6–7.5 × 5.5–6.5 μm, (2), 8–9.5 × 7.5–8.5 μm, 0.2–1 μm longioribus latitudine, globosis vel breviter ellipsoideis, plerumque subglobosis, levibus. **Hymenio**: Basidiis 19–20 × 8.5–9 μm, tetrasporis, ventricosis. Cystidiis sat numerosis, haud metuloideis sed pariete 0.3–0.6 μm crassa instructis, 30–71 × (9–)13–20.5 μm, ventricosis, rarius subampullaceis, aut late rotundatis aut apice 1–4, plerumque 2–3 appendiculis subglobosis vel breviter digitaliformibus ornatis, hyalinis, haud manifeste incrustatis. Cheilocystidiis 30–59(–71) × 7–15(–20) μm, clavatis, raro ventricosis vel ampullaceis, haud appendiculatis, tenuitunicatis, hyalinis. **Hyphis** defibulatis, sed fibrillis plerumque incompletis rarissime observatis. Tramate hymenophorali inverso, hyalino. **Epicute pilei** in margine pilei cutiformi, ex hyphis terminalibus applicatis, pigmento vacuolari aut dissoluto aut partim colloidaliter condensato impletis efformata, discum versus pilis dermatocystidioideis aggregatis, fuscis, ascendentibus vel erectis, basin versus ventricosis et 10–11 μm latis, apicem versus plerumque cylindraceutis vel attenuatis et 2–6 μm latis, obtusis, numerosis, 60–90 μm longis; pigmento vacuolari. In stipitis superficie dermatocystidiis haud visis.

Ad lignum emortuum dicotyledoneum delapsum in silva tropicali typi igapó, gregatim.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 13 III 1983, *Singer B 12426* (F).

The characters of this species are, in a way, intermediate between sect. *Pluteus* and sect. *Hispidoderma*. Since *P. albostipitatus* (Dennis) Sing. is obviously closely related, I insert *P. melanopotamicus* in sect. *Hispidoderma*.

Pluteus varzeicola Sing., spec. nov.

Pileo fusco, marginem versus fusco-griseo, atro-griseo vel atrofusco in juvenilibus, mox longe sul-

culato, lenissime venoso-ruguloso in centro, sed saepe sublevi in vegetis, campanulato vel ovoideo, dein campanulato-convexo, subumbonato vel umbonato ut minime in adultis, (18–)23–45 mm lato, 16–18 mm alto. **Lamellis** primum albis acie albis, dein grisellis et grisello-roseis, ut minime in siccis, subconfertis vel confertis, liberis. **Stipite** albido vel albido-sordido, sed haud atro-fibrilloso neque in vegetis neque in siccis, glabro, aequali, ad ipsam basin subincrassato, 41–46(–55) × 2.5 mm, ad ipsam basin 3–4 um diam. **Carne** alba, immutabili.

Sporis (5.5–)6–6.5(–7) × 5(–5.5) μm, breviter ellipsoideis vel subglobosis, rosellis, levibus. **Hymenio**: Basidiis 20.5–22.5 × 7–8.5 μm, clavatis, dein ventricosis, tetrasporis, nonnullis sclerificatis pariete usque ad 0.5 μm crassa munitis. Cystidiis ad aciem et latera lamellarum sat numerosis, 15–50 × 10–24 μm, clavato-ventricosis vel ventricosis, tenuitunicatis, integris, ad aciem lamellarum semper fere, ad latera frequenter fuscidulis e pigmento dissoluto, vacuolari. **Hyphis** defibulatis. Tramate hymenophorali inverso. **Epicute** hymeniformi vel subhymeniformi (post pluvias in zona marginali pilei subconfusa), ex elementis ventricosos-clavatis, breviusculis e. gr. 25 × 13 μm et dermatocystidiis interspersis efformata. Dermatocystidiis 40–59 × 18–31 μm, ventricosis, ad apicem late rotundatis; pigmento in cellulis epicutis pilei vacuolari, dissoluto vel colloidaliter condensato, fusco vel fuscidulo.

Ad lignum emortuum dicotyledoneum in silva tropicali typi várzea (inundabili), gregatim, rarius solitario.

TYPUS—Brazil, Amazonas, Ilha Marchantaria, 9 III 1983; leg. *Singer, Araujo, Walker & Adis; Singer B 12397* (F). Another specimen [Paraná do Janauacá, 23 V 1980, *Singer B 12182* (F)] is probably conspecific. It also comes from várzea vegetation but had cystidia and cheilocystidia all hyaline, without pigmentation.

Pluteus dennisii Sing. ex Sing., spec. nov.

Pluteus varzeicola Sing. differt stipite minute atropunctato e dermatocystidiis, acie lamellarum in maturis alba, cheilocystidiis hyalinis, habitatione in silva haud inundabili.

TYPUS—Trinidad: Non Pareil, Sangre Grande, 11 X 1949, *Dennis 152* (K).

This species is close to *P. varzeicola* Sing. but differs from it as well as from *P. psychriophorus* (Berk. & Br.) Sacc. and related species. *Pluteus minutus* Pat. (type from Vietnam: Hanoi, seen, FH) is also related to *P. varzeicola* and *P. dennisii*, and has been recollected by me in South America: Brazil: Bahia, Itabuna, on discarded cacao pods, 7 VI 1973, *Singer B 11119* (INPA). Here, the stipe is not dark punctate as in *P. dennisii* and the spores are more spherical ($4-6 \times 3.8-6 \mu\text{m}$, mostly $5.2-5.6 \times 5-5.4 \mu\text{m}$) than in *P. varzeicola*. In my earlier papers I combined all these Plutei with *P. psychriophorus* as varieties, but they are apparently separated by fairly constant character combinations, by their ecological requirements, and by geography. The type (κ) of *P. psychriophorus* has been redescribed by me (Trans. Brit. Myc. Soc. 39: 208, fig. 56, 1956).

AGARICACEAE Roze

Leucoagaricus tricolor Sing., spec. nov.

Pileo purpureo margine pallidiore, hic purpuro-fibrilloso radiatim supra fundamentum pallidum sed haud sulcato nec pectinato nec rimoso, sed partim subsquamuloso, convexo, obtuso, 6 mm lato. **Lamellis** pallide griseis, siccis brunneo-griseis, confertis, mediocriter latis, liberis. **Stipite** albo, ex integro pruinoso, aequali vel basi leniter incrassato, 14×0.6 mm. Annulo fragmentario, fugaci, albo, pruinoso-pubescente. **Carne** alba vel albida, tenui.

Sporis ($7.5-8.2-9 \times 4.5-5.2 \mu\text{m}$, ellipsoideis, pariete duplici et poro manifesto germinativo sed imperfecto instructis, hyalinis, pseudoamyloideis, levibus. **Hymenio**: Basidiis $24-27 \times 7.5-9.5 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis ex hyphis acieis lamellarum cylindraceis vel filamentosis, stramineo-ochreis natis, $23-38 \times 5.5-10 \mu\text{m}$, clavatis, tenuitunicatis, stramineo-ochreis. **Hyphis** defibulatis, inamyloideis. Tramate hymenophorali regulari, hyalino. **Epicute pilei** ex fasciculis hypharum parallelarum applicatarum, interdum furcatarum, $2-8 \mu\text{m}$ laterum efformata quae in nonnullis locis partim ascendunt, stramineo-ochrea; pigmento intraparietali et incrustante nullo. Ad terram argillosam inter quisquillas in silva tropicali typi terrae firmae, solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 3 IV 1978, *Singer B 10868* (INPA).

The habit of this species reminds one of some *Micropsalliotas*, but otherwise this is a typical representative of *Leucoagaricus*, sect. *Rubrotincti*.

Leucocoprinus bakeri (Dennis) Sing., comb. nov.

BASIONYM—*Lepiota bakeri* Dennis, Kew Bull. 483. 1952. Cf. Singer, Brenesia 19/20: 42. 1982.

Hiatulopsis aureoflava Sing., spec. nov.

Pileo aureo (“Florida gold” M&P), marginem versus flavo (“primuline Y” M&P), subtiliter denseque flocculoso, flocculis detergibilibus, per medium radium pectinato, obovato vel campanulato, 7 mm lato, 11 mm lato. **Lamellis** albidis, angustis, ascendentibus, confertis, subliberis vel liberis. **Stipite** flavido (“amber Y” M&P), supra basin aureo (“Florida gold”) et tomentosum-balteato, subtiliter flocculoso-pulverulento supra zonam tomentosam, apicem versus attenuato, 36×1.8 mm, ad basin 4 mm diam. Annulo volvae nullis. Mycelio basali albido. Sclerotiis nullis. **Carne** alba, inodora.

Sporis (in typo paucis) $7-10 \times 5.5-6.5 \mu\text{m}$, ellipsoideis, pariete initio homogenea dein typi XI modo ornamentata (photomicroscopice), hyalina instructis, poro germinativo destitutis, inamyloideis, depressione suprahilari destitutis. **Hymenio**: Basidiis $22-34 \times 11-13 \mu\text{m}$, tetrasporis. Cystidiis nullis visis. **Hyphis** debibulatis, hyalinis in KOH, tenuiter tunicatis, inamyloideis. Tramate hymenophorali regulari, hyphis intertextis. **Epicute pilei** ex hyphis admodum irregularibus, latis, intertextis efformata; pigmento intercellulari.

Ad radicellas et folia delapsa in silva tropicali typi campinarana solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 28 II 1978, *Singer B 10733* (INPA).

Cystolepiota albobilva Sing., spec. nov.

Pileo dilute gilvo-flocculoso supra fundamentum pallidum et ad marginem albo, flocculis primum subvenose dispositis, convexo, dein subapplanato et centro leniter depresso, usque ad 10 mm lato. **Lamellis** albidis vel pallide cremeis, satis angustis vel latis, confertis, liberis. **Stipite** albo vel pileo concolori, macroscopice glabro et nudo, sub

lente subtiliter pruinato, glabrescente, aequali, 15–19 × 1–2 mm. Annulo nullo. Mycelio basali albo vel albedo. **Carne** alba, inodora.

Sporis 3.8–5.5 × 2.5 μm, ellipsoideis, haud truncatis nec calcariatis, levibus, in KOH hyalinis vel flavido-hyalinis, tenuiter vel firme tunicatis, inamyloideis. **Hymenio:** Basidiis 11–13 × 3.5–4.5 μm, tetrasporis, basidiolis haud fusoides. Cystidiolis sparsis, 7–15 × 5–7 μm, basidiomorphis sed basidiis sublatis. Nonnullis basidiis et cystidiolis passim intus pseudoamyloideis, sed eorum pariete inamyloidea. **Hyphis** hyalinis, tenuitunicatis, inamyloideis, fibulatis. **Epicute pilei** profunda sed intermittente, epitheliali, ex cellulis angularibus, subsisodiametricis, ± 25 μm diam., flavido-stramineis efformata. Hypodermio cutiformi, ex elementis multiseptatis, horizontalibus, hyphalibus, flavido-stramineis efformato.

Ad terram et quisquillas palmigenas in silva secundaria, typi terrae firmae sed igapó vicina.

TYPUS—Brazil, Amazonas, Ponta Negra, 1 I 1978, *Singer B 10445* (INPA).

Cystolepiota amazonica Sing., spec. nov.

Pileo ferrugineo-brunneo vel subcastaneo, neque hygrophano nec viscido, glabro, leniter venoso-ruguloso vel sublevi, margine demum subsulcato, campanulato, papillato, 3 mm lato et alto. **Lamellis** albis, siccis pallide sordideque brunneolis, subconfertis, moderatim angustis, haud intervenosis, liberis vel peranguste adnexis. **Stipite** castaneo, glabro, apicem versus attenuato, 12 × 0.8 mm. Annulo nullo viso. Mycelio basali albo. **Carne** alba in vegetis, tenui, inodora.

Sporis 2.5–2.8 × 2–2.2 μm, subglobosis vel globosis, pro ratione firme tunicatis, cyanophilis, pleurumque (sed haud omnibus) pseudoamyloideis, levibus, hyalinis, azureo cresylico haud metachromaticis. **Hymenio:** Basidiis 11–12.5 × 3.5–4.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis dimorphis, (1) ampullaceis, apice tenui sed interdum sursum leniter anguste claviculari, basi et medio ventricosis, (2) ventricosis vel subvesiculososis, late obtusis, ambobus hyalinis, tenuitunicatis, inamyloideis, magnitudine elementorum epicutis pilei. **Hyphis** in tramate pilei et stipitis hyalinis, haud gelatinosis, fibulis nullis vel rarissimis. Tramate hymenophorali regulari, ex hyphis anguste cylindraceis vel filamentosis, densis, debiliter pseudoamyloideis efformato. **Epicute pilei** hymeniformi, ex elementis ventricosis et vesiculososis, interdum

transverse septatis efformata, certis in locis bistrata vel tristrata (sic epithelium intermittens formante), his elementis 9–19 × 7.5–14 μm, inamyloideis, haud incrustatis, tenuitunicatis, in KOH subincoloribus. Hypodermio cutiformi, denso, ex hyphis multiseptatis, versus pilei trama angustioribus efformato.

Ad folia dicotyledonea delapsa, putrescentia, solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 17 V 1977, *Singer B 9643* (INPA).

Cystolepiota potassiovirens Sing., spec. nov.

Pileo brunneo vel atrobrunneo, sed umbone excepto minute alutaceo-pallido-furfuraceo, praesertim sub lente viso, convexo, papilla vel umbone exiguo centrali ornato, 10 mm lato. **Lamellis** bisofuscis, latis, subventricosis, subconfertis, liberis. **Stipite** atrocastaneo, pruinato, levi, stricto, subaequali, 17 × 0.8–1 mm. **Carne** superficiebus concolori, inodora.

Sporis 3.3–4 × 2.5–3 μm, ellipsoideis, hyalinis, KOH ope virescentibus, inamyloideis sed pigmenti violacei solutione (in medio acetico ex elementis epithelii exudante) lilascentibus, poro germinativo et depressione suprahilari destitutis, pariete apparenter simplici instructis. **Hymenio:** Basidiis 15–21 × 5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorphicas 31–57 × 7–9.5 μm, ampullaceis, rarius anguste utriformibus, apice aut constrictione 5–5.5 μm diam., hyalinis vel intus pallidissime griseis vel sublividis (KOH). **Hyphis** flocculorum pilei epithelialiter dispositis, cellulis subglobosis vel angularibus, 10–25 μm diam. Hypodermio continuo, cutiformi, ex cellulis hyphalibus, saepe pluriseptatis, tenuitunicatis, ad septa constrictis efformato. Pigmento epicutis et hypodermii in medio acido violaceo, in alkalino viridi.

Ad terram in silva tropicali primaria typi terrae firmae solitario vel gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus (“EMBRAPA”), 31 XI 1977, *Singer B 10247* (INPA), with photo.

Lepiota gomezii Sing., spec. nov.

Pileo albo, subsquamoso, lanoso, nec striato nec pectinato, umbone nudo, convexo, umbonato, 7–

11 mm lato. **Lamellis** albis, liberis. **Stipite** albo, subglabro vel lanoso, aequali sed ad basin gradatim incrassato, 16–27 × 1–1.5 mm, ad basin usque ad 3.5 mm diam. Superficiebus KOH ope brunnescentibus.

Sporis 5–6 × 3–4 μm, ovoideis, depressione suprahilari vel applanatione destitutis, calcare et poro germinativo nullis, levibus, azurei cresylici ope haud metachromaticis, pseudoamyloideis, levibus. **Hymenio:** Basidiis 6.7 μm latis, tetrasporis. Cheilocystidiis ad aciem lamellarum heteromorpham, 18–40 × 4–8 μm, ampullaceis vel subcylindraceutis, apice saepe incrassatis vel basi incrassatis, apice in ampullaceis 4–6 μm diam., obtusis, hyalinis, tenuitunicatis, hyalinis vel pallidissime substramineis. **Hyphis** defibulatis, inamyloideis. **Epicute pilei** trichodermiali, ex elementis elongatis, multiseptatis efformata, sphaerocystibus nullis.

Ad quisquilias in ramentosis sub quercubus in silva ectotrophica tropicali.

TYPUS—Costa Rica, Guanacaste, 7 km NW of Bagaces, October 1982, *Gómez 18713* (F).

Lepiota izonetae Sing., spec. nov.

Pileo aurantio-ferrugineo vel ferrugineo-brunneo in centro integro, aurantio-ferrugineo vel ferrugineo-brunneo-squamuloso supra fundamentum album circum discum, levi, campanulato-convexo, obtuso, 7 mm lato, 6 mm alto. **Lamellis** albis, acie albis, moderatim latis, confertis, liberis. **Stipite** albo, sed leniter albido vel ferrugineo-maculato-fibrilloso in parte inferiore, aequali, ebuboso, exannulato 39 × 2 mm. Velo annuliformi nullo sed margine pilei albo-fibrilloso e velo. **Carne** alba, immutabili, inodora.

Sporis 6–7 × 4.5 μm, ellipsoideis, calcare destitutis, poro nullo, pariete hyalina, levi, leniter aut fortiter pseudoamyloidea. **Hymenio:** Basidiis 17–20 × 6–8 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis 27–53 × 8–11 μm, clavatis, hyalinis, acie lamellarum ex eis heteromorpha. **Hyphis** haud gelatinosis, fibulatis, inamyloideis. **Epicute pilei** ex cellulis terminalibus hypharum ascendentibus et cystidiformibus efformata, his interdum aggregatis, immo subhymeniformiter dispositis, 30–38 × 13.5–23 μm, ventricosis vel subvesiculososis, integris, levibus, parietibus crassis, brunneis (0.5–1.8 μm diam.) instructis, ex hyphis basalibus ex hyodermio hyalino vel subhyalino ascendentibus natis.

Ad folia dicotyledonea delapsa in silva tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 26 XII 1977, leg. *Izonete Araujo Aguiar & Singer B 10409* (INPA).

Lepiota apalochroa (Berk. & Br.) Sacc. is related. *Lepiota apalochroa* and *L. izonetae* both belong in sect. *Cristatae*.

Lepiota xanthophylloides Sing., nom. nov.

BASIONYM—*Lepiota xanthophylla* Sing., Sydowia Beih. 7: 67. 1973, non *L. xanthophylla* Orton, Trans. Brit. Myc. Soc. 43: 289. 1960.

Chamaemyces(?) paraensis Sing., spec. nov.

Pileo fulgineo (“elk” M&P), subtiliter sub lente velutino in centro et pubescente ad marginem, sed macroscopice glabro, levi, nec viscoso neque hygrophano, subapplanato, umbonato, 17 mm lato. **Lamellis** grisello-pallidis, ad aciem pallide succineis et sub-erosis, confertissimis, satis angustis et linearibus, horizontalibus, liberis vel profunde sinuato-liberis. **Stipite** griseo (“grey 31” M&P), glabro, aequali, 30 × 1.8 mm. **Carne** pilei grisea in strato sperno, bubalina in inferno, pallide grisea in stipite, inodora.

Sporis 5–7.8 × 3.5–5 μm, plerumque 7 × 5 μm, ellipsoideis, depressione suprahilari destitutis, levibus, hyalinis, strato externo parietis carmini acetici ope atrorubro tincto sed saepe obsoleto et endosporio azurei cresylici ope haud metachromatico instructis, exosporio azurei cresylici ope atrocaeruleo, tota pariete inamyloidea, nucleis binis. Colore sporarum pulveris ignoto, sed eum albidum esse aestimo. **Hymenio:** Basidiis 18–23 × 6.5–7 μm, tetrasporis, clavatis, basidiolis haud fusoides. Cystidiis admodum sparsis, paucis, cheilocystidiis simillimis. Cheilocystidiis dimorphis, (1) frequenter conniventibus, 25–40 × 5–5.5 μm, cylindraceutis vel cylindraceuto-subutriformibus, massis resinaceis succineis vel ochraceo-brunneis amorphis incrustatis, (2) sparsis, ampullaceis vel cylindraceutis, 29–40 × 2–5 μm, hyalinis et haud incrustatis; ambobus typis hyaline et tenuiter tunicatis. **Hyphis** defibulatis, inamyloideis, in zona supralamellari pilei angusta hyalinis, ceterum radialiter dispositis et pigmento intracellulari dissoluto et intraparietali et incrustante atrofusco im-

pletis atque obtectis, in stipite parallelis. Tramate hymenophorali regulari, hyalino (NH₄OH), ± 25 µm diam. **Hyphis** 2–22 µm latis, in nulla parte gelatinosis. **Epicute pilei** ad marginem ex dermatocystidiis haud continue hymeniformiter dispositis, his prostratis vel saepius erectis, 13–25 × 4–6.5 µm, fusosideo-ventricosis vel ampullaceis, ex crescentiis tenuibus, brevibus hypharum hypodermii interspersis; pigmento nullo vel vacuolari et dilutissime fuscidulo; in centro pilei epicute hymeniformi vel subhymeniformi, elementis clavatis, ventricosis vel ampullaceis et usque ad 26 × 7 µm, plerumque hyalinis, integris, obtusis. Hypodermio cutiformi, sed a strato superno tramatis pilei vix differentiato, pigmentato pigmento atrofusco intracellularem atque incrustante. Tegumento stipitis e dermatocystidiis et excrescentiis erectis hypharum longitudinalium efformato. Dermatocystidiis 10–20 × 3.5–5 µm, versiformibus, e. gr. filamentosis, subulatis, subvesiculososis.

Ad detritum in silva humida topicali solitario.

TYPUS—Brazil, Para, Belem, Estancia Pirelli, 7 VI 1966, *Singer B 4243* (BAFC) (“*Mellomyces paraisensis*” in herb.).

This new species is of somewhat uncertain taxonomic position, but according to the majority of its characters fits best in *Chamaemyces*. By some characteristics and its habit it reminds one of the neotropical species of *Podabrella*, but the epicutis and the spores are different and aberrant for that genus and the basidia are not siderophilous as they are in other *Termitomycetaceae*. *Lepiota rufipes* Morgan sensu Kühner and possibly *Schulzeria squamigera* Schulz & Bres. appear to be related.

COPRINACEAE Roze

Psathyrella indica (Sathe & Daniel) Sing., comb. nov.

BASIONYM—*Phaeomyces indica* Sathe & Daniel, *MACS Monogr.* 1: 97. 1980. Related to *P. typhae*.

Psathyrella januariensis Sing., spec. nov.

Pileo brunneo, hygrophano, per quatuor quintas partes radii pellucide striato et sulcato, glabro, conico, 10–15 mm lato, 3.5–5 mm alto. **Lamellis**

cinnamomeo-griseolis, subconfertis vel mediocriter confertis, satis angustis, sed subventricosis, anguste adnexis. **Stipite** albo, glabro, nudo, evelato, cavo, aequali, 31–42 × 0.6–1.2 mm. **Carne** inodora.

Sporis 6.7–7.5(–8.2) × 4.3–4.8 µm, ellipsoideis vel ovoideis, lateraliter visis phaseoliformibus, levibus, poro germinativo, ± pallido, truncato munitis, in NH₄OH castaneis, in KOH griseis. **Hymenio**: Basidiis plerumque tetrasporis, his et cystidiis (praesentibus?) collapsis in typo. Cheilocystidiis 23 × 8 µm, utriformibus. **Hyphis** fibulatis in tramate pilei pigmento intraparietali melleo instructis, in stipite subparallelis et hyalinis. **Epicute pilei** hymeniformi, ex elementis 15 × 12 µm, subvesiculososis, erectis efformata. Hypodermio ex elementis subvesiculososis verticaliter catenulatis, pallide ochreis (KOH) efformato et subepithelioso. Tegumento stipitis subnullo.

Ad frustula foliorum putrescentium et lignea in silva typi varzeae (inundabili) gregatim.

TYPUS—Brazil, Amazonas, Lago Januari, 18 IV 1983, *Singer B 12447* (F).

This species, common in várzea vegetation, should be compared with *Psathyrella dichroma* (Berk. & Curt.) A. H. Smith, but in this Cuban species the stipe is less slender, the lamellae are distant, and the general habit seems different.

Psathyrella lignatilis Sing., spec. nov.

Pileo carneo-griseo, centro subbiso, hygrophano, glabro, nudo, evelato, centro levi, margine per duas tertias radii pellucide striato et sulcato, convexo, subumbonato, 23–30 mm lato. **Lamellis** porphyrio-brunneis, satis angustis, confertissimis, adnatis. **Stipite** albo, nudo, cavo, aequali, 26 × 2 mm. **Carne** alba, inodora.

Sporis 7–8.7 × 4.7–5.7 µm, ellipsoideis, poro germinativo manifesto nullo sed ad apicem pariete multum attenuata instructis, levibus, bene pigmentatis, in NH₄OH porphyrio-brunneis, in KOH griseis. **Hymenio**: Basidiis 16.5 × 7.8 µm, tetrasporis. Cystidiis nullis. Cheilocystidiis numerosis ad aciem et prope aciem, plerumque utriformibus, nonnullis late ventricosis vel clavatis, 28.5–40 × 8.5–14.3 µm, hyalinis, tenuitunicatis. **Hyphis** tramatis hymenophoralis regularis subhyalinis vel ochreo-hyalinis, latis vel latissimis. **Epicute pilei** hymeniformi ex elementis subvesiculososis efformata, subhyalina.

Ad lignum putridum dicotyledoneum in silva arenosa typi campinarana gregatim.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 11 VII 1977, *Singer B 10076* (INPA).

This Amazonian species differs from *P. campestris* (Earle) A. H. Smith in being lignicolous in campinarana vegetation, and in its naked stipe, narrower basidia, and much better developed germ pore of the spores. It differs from *P. cordobaensis* A. H. Smith especially by larger spores.

Psathyrella segregis Sing., spec. nov.

Pileo fusco-griseo vel melleo-griseo, hygrophano, dehydratione dilute griseo-ochraceo, per 5 mm a margine pellucide striato, obtuse conico, glabro, nudo, 20 mm lato. **Lamellis** dilute griseis, siccis grisello-brunneis, confertis vel subconfertis, acie saepe pallidis, mediocriter latis, ventricosis, adnexas. **Stipite** albo, prope basin pallide fuscido, glabro, nudo, subaequali, sed plerumque gradatim attenuato apicem versus, 48–49 × 3–4 mm. Velo nullo. **Carne** stipitis alba, immutabili fractu, odore farinae.

Sporis 6.3–7(–8) × 3.7–4.3 μm, in ammonia porphyrio-brunneis, post unam horam brunnescentibus, ellipsoideis vel subcylindraceis, leniter vel vix angustioribus et plerumque leniter phaseoliformibus lateraliter visis, levibus, poro germinativo apicali, centrali, truncato munitis. **Hymenio:** Basidiis 13–16 × ± 6–6.5 μm, hyalinis, tetrasporis. Cystidiis sat numerosis, 31–50 × 4.5–8 μm et cylindraceis aut × 9–15 μm et ampullaceis, tunc apice aequali, obtuso vel dilatato-subcapitato (6–8 μm diam.), hyalinis vel subhyalinis, tenuitunicatis. Cheilocystidiis numerosis, cystidiis ad aciem intermixtis, 25–33 × 9–15 μm et saccato-ventricosis, interdum mucronatis, aut 19–28 × 10–15 μm et ventricosos-vesiculosos, omnibus tenuitunicatis et hyalinis. **Hyphis** fibulatis, in tramate hymenophorali regulari brunneolo-hyalinis (NH₄OH). **Epicute pilei** hymeniformi, ex elementis erectis, 40–52 × 20–25 μm, hyalinis vel subhyalinis, vesiculosos vel ventricosis, interdum anguste mucronatis, tenuitunicatis, numquam incrustatis efformata. Hypodermio cutiformi, brunneo, sed sine pigmentis incrustantibus manifestis. Dermatocystidiis nullis vel perpaucis et raris.

Ad terram sub Tiliis solitario.

TYPUS—USA, Michigan, Berrien County, Warren Woods, 29 IX 1973, *Singer N 4500* (F).

This is a rare species belonging in sect. *Fibrillosae*; it is obviously different from all species of *Psathyrella* described in Smith's monograph (1972).

Psathyrella varzeae Sing., spec. nov.

Pileo saturate brunneo in humidis, fortiter hygrophano, dehydratione in disco gilvo, ceterum gilvo-pallido, glaberrimo, levi, nudo, evelato, obtuse conico, dein conico-convexo vel convexo, in humidis pellucide tantum striato, estriato in siccis, 25–31 mm lato. **Lamellis** atrobrunneis vel vinateo-brunneis, haud griseo-tinctis umquam, angustis, confertis, in maturis intervenosis, adnexas. Sporis in massa atrocastaneis. **Stipite** albo, glabro, nudo, cavo, aequali et ad basin abrupte incrassato vel apicem versus gradatim attenuato, 42–108 × 2–4 mm, ad basin usque ad 5.5 mm lato. Velo nullo. **Carne** partim subbrunneola, pallescente, in stipite alba, inodora.

Sporis 6.5–8 × 4–5 μm, ovoideis vel ellipsoideis, raro lateraliter visis phaseoliformibus, levibus, bene pigmentatis, in ammonia brunneis, in KOH sepiaceis, poro germinativo lato, apicali, truncato munitis, guttula rotunda centrali interna repletis. **Hymenio:** Basidiis 24 × 7–8 μm, hyalinis, tetrasporis. Cystidiis metuloideis, numerosissimis ad aciem et latera lamellarum, 34–66 × (9–)10–26 μm, hyalinis vel subhyalinis, numquam ubivis brunneis, in parte superna crasse tunicatis (pariete hic (1–)2–4 μm diam., interdum apice ipso solido), basin versus gradatim tenuius tunicatis, incrustatione tenui hyalina vel subhyalina manifesta, ammoniae ope haud virescente obtectis, ut minime ad apicem extremum, fusoides vel late fusoides. Cheilocystidiis e. gr. 30 × 10 μm, versiformibus, frequenter ampullaceis, tenuitunicatis, collabentibus. **Hyphis** pallide brunneolis, fibulatis (in tramate pilei, KOH). Tramate hymenophorali regulari. **Epicute pilei** epitheliosa, hyalina vel subhyalina. Hypodermio brunneo.

Ad terram in silva tropicali typi várzea gregatim.

TYPUS—Brazil, Amazonas, Lago Janauari, 18 III 1983, *Singer B 12430* (F).

This belongs in subg. *Homophron* sect. *Cystidiosae* and is related to *P. cystidiosa* (Peck) A. H.

Smith but different because of its truncate germ pore and the darker color of the pileus, the somewhat shorter spores and metuloids, the longer stipe, and the habitat in várzea. It also differs from *P. spadicea* (Schaeff. ex Fr.) Sing. in well-pigmented spores and from *P. hesleriaffinis* Sing. in the absence of a veil.

BOLBITIACEAE Sing.

Conocybe amazonica Sing., spec. nov.

Pileo ochraceo-brunneo, \pm hygrophano, glabro, longe pellucide striato, campanulato-subhemisphaerico, 6 mm lato. **Lamellis** ferrugineo-brunneo-ochraceis, latis, subventricosis, subsacendentibus, acie pallidis, adnaxis. **Stipite** ad apicem albo, subtus pallide brunneo, sparse minute farinaceo-pruinoso, haud radicante, aequali, 43×0.5 mm. **Carne** pallida vel pallide brunneo et tenui, inodora.

Sporis $13.5-15.5 \times 8-8.5$ μm , ellipsoideis, levibus, bene pigmentatis in ammonia, poro germinativo lato, truncato munitis. **Hymenio** in ammonia haud crystallophoro. **Basidiis** $24.5 \times 7-12$ μm , (2-)4-sporis. **Cystidiis** nullis. **Cheilocystidiis** $23-32 \times 7-10$ μm , lecythiformibus, hyalinis vel intus brunneolis, capitulo globoso, $5-7(-7.8)$ μm diam. **Hyphis** fibulatis. **Epicute pilei** hymeniformi. Tegumento stipitis dermatocystidiis singulis et aggregatis sed haud continuis efformato, dermatocystidiis lecythiformibus, $29-32 \times 7-10$ μm numerosis et aliis etiam sat numerosis, 23×10 μm , his capitulo destitutis, omnibus hyalinis. Pilis hyphalibus longis nullis.

Ad frustula lignea in silva tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 11 V 1977, *Singer B 9862* (INPA).

Conocybe digitalina (Velen.) Sing., comb. nov.

BASIONYM—*Galera digitalina* Velen., Nov. Myc. Nov. (Opera Bot. Cech. 4): 70. 1947. *C. subpubescens* Orton 1960 belongs here.

Conocybe echinata (Velen.) Sing., comb. nov.

BASIONYM—*Galera echinata* Velen., Nov. Myc. Nov. p. 69. *Conocybe sordida* (Kuhn. ex) Kuhn.

& Watling is the same. Velenovsky described the cystidia as echinulate; in the type (PR) such cystidia are absent.

Conocybe izonetae Sing., spec. nov.

Pileo fuscidulo-brunneo, pallido-virgato, in vegetis pallucide striato, hygrophano, convexo, obtuso, glabro, 7 mm lato. **Lamellis** ochraceo-brunneis, confertis, sat latis minime ventricosis, adnaxis. **Stipite** pallido, subtiliter pubescente (sub lente), aequali sed pseudorrhiza longa praedito, (cum pseudorrhiza) 85×0.2 mm. **Carne** inodora.

Sporis $8.7-9.5(-10.5) \times 5-5.7(-6)$ μm , ellipsoideis, depressione applanationeque suprahilari destitutis, levibus, pariete crassa, in ammonia bene pigmentata et poro germinativo lato, truncato munitis. **Hymenio** crysallis in ammonia nullis. **Basidiis** $14.5-18 \times 8.5-9.5$ μm , tetrasporis. **Cystidiis** nullis. **Cheilocystidiis** lecythiformibus $14-21 \times 6.5-7$ μm , hyalinis, capitulo $3.3-4.5$ μm diam. **Hyphis** fibulatis. **Epicute pilei** hymeniformi, ex elementis latis, subisodiametricis, subvesiculososis vel vesiculososis, hyalino-tunicatis efformata; dermatocystidiis paucis, dermatocystidiis capitatis stipitis simillimis. Tegumento stipitis e dermatocystidiis et pilis hyphosis efformato; dermatocystidiis lecythiformibus (capitulo $2.5-4$ μm diam.) $17-21 \times 3-6.5$ μm et late ventricosis, haud capitatis, obtusis, $10-26 \times 6.5-8.5$ μm . Pilis hyphosis ($12-50-60 \times 2-2.5$ μm , sed saepe ad basin $3-5.5$ μm latis, hyalinis.

Ad terram in silva tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 23 III 1978, *Singer B 10855* (INPA).

This belongs in sect. *Mixtae* where it is remarkable because of its pallid, radicans stipe.

Conocybe javanica Sing., spec. nov.

Pileo ferrugineo-coriicolori, radiatum ruguloso, margine striatulo, subincurvo, conico, 44 mm lato. **Lamellis** concoloribus, confertis, angustis, haud ventricosis, acie albis, adnatis. **Stipite** subconcolori vel pallidiore, sericeo-fibrilloso et longitudinaliter sulcato, tenui, cavo, pileo longiore, radicante(?).

Sporis \pm cruciformibus, raro triangularibus, ut in *Inocybibus*, 3 vel 5 nodis obtusis, raro his ab-

sentibus, membrana duplici $0.8\ \mu\text{m}$ crassa inamyloidea, levi instructis, laete ferrugineis in ammonia, atro-rufo-castaneis in KOH, lateraliter visis angustioribus (lentiformibus), poro germinativo late truncatis. **Hymenio:** Basidiis $15\text{--}21 \times 6.5\text{--}8\ \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis $12.8\text{--}19 \times 4\text{--}6.2\ \mu\text{m}$, lecythiformibus, capitulo $2.5\text{--}5\ \mu\text{m}$ diam., hyalinis. **Hyphis** fibulatis. Tramate hymenophorali typi *Conocybarum* modo regulari. **Epicute pilei** subhymeniformi, ex elementis $45\text{--}62 \times 16\text{--}31\ \mu\text{m}$ clavato-ventricosus vel subvesiculosus, longe pedicellatis, ferrugineobrunneis efformata (pigmento intraparietali et incrustante), sed hyphis repentibus $1\text{--}3\ \mu\text{m}$ diam. hymenium in certis areis obtegentibus. Tegumento stipitis in typo obscuro, sed apparenter eo *C. nodulosospora* e simili.

In silva tropicali.

TYPUS—Indonesia, Java, *Höhnel*, herb. sheet no. 3860 (FH).

Conocybe nodulosospora (Hongo) Watling is closely related. The new species from Java has few nodules on each spore and I have not observed dermatocystidia on the pileus.

Conocybe leporina (Velen.) Sing., comb. nov.

BASIONYM—*Galera leporina* Velen., l. c. p. 68. Similis est *C. siliginea* var. *neoantipus* (Atk.) Kühn. sensu Kühn. non Atk.

Conocybe mesospora var. *subalpina* Sing., var. nov.

A var. *mesospora* sporis nonnihil majoribus differt: **Sporis** $(9\text{--})10\text{--}11\text{--}(11.5) \times (5\text{--})5.2\text{--}6\text{--}(6.5)\ \mu\text{m}$. Habitat in zona Alpium subalpina ad terram intergramina.

TYPUS—Switzerland, Vaud, above Pont de Nant, ± 1300 m alt., 6 VII 1984, *Singer C 9682* (F).

Conocybe myosura Sing., spec. nov.

Pileo ochraceobrunneo (“Martinique” M&P), hygrophano, pellucide striato et inter strias pallidior per $4/5$ vel $5/6$ radii, glabro, convexo dein subapplanato, papilla exigua ornato vel subumbonato, 15 mm lato. **Lamellis** ochraceo-brunneolis (“topaz” vel “spruce Y”), acie pallidis confertis,

sat angustis, liberis. **Stipite** ex integro albo vel albedo in vegetis sed siccando brunneo, ad apicem pruinato, cavo, filiformi, pseudorrhiza \pm manifesta attenuata munito, (cum pseudorrhiza) $35\text{--}80 \times 1\text{--}1.2$ mm. **Carne** inodora.

Sporis $7\text{--}9 \times 4.8\text{--}5\ \mu\text{m}$, ellipsoideis, levibus, ferruginascente-melleis in ammonia, ferrugineis sed haud intense coloratis in KOH, poro germinativo munitis. **Hymenio** in ammonia crystallis aculeiformibus nullis. Basidiis tetrasporis. Cystidiis nullis. Cheilocystidiis $14\text{--}17 \times 6\text{--}9\ \mu\text{m}$, lecythiformibus, hyalinis, capitulo $2.5\text{--}3.5\ \mu\text{m}$ diam. **Hyphis** fibulatis, eis stipitis parallelis et incolore in vegetis, pallidissime ochraceis sed haud pigmento intraparietali notabiliter visibili et incrustatione nulla, omnibus hyphis fibulatis. Tramate hymenophorali pallide brunneo, typi *Conocybarum* (sensu stricto) modo regulari. **Epicute pilei** cellulari-hymeniformi, dermatocystidiis nullis. Tegumento stipitis in parte media stipitis dermatocystidiis lecythiformibus destituto, sed dermatocystidiis vesiculosus apicaliter prolongatione filiformi sat brevi saepe praeditis et pilis hyphosis hyalinis longis nonnullis praesentibus.

Ad terram inter folia delapsa in silva tropicali.

TYPUS—Bolivia, Riberalta, 31 III 1956, *Singer B 2403* (LIL, holotype; BAFC, syntype).

This differs from *C. izonetae* Sing. by the rather small spores and less developed pseudorrhiza and especially by the absence of lecythiform dermatocystidia on the stipe.

Conocybe stictospora Sing., spec. nov.

Pileo brunneo (14 J 10 M&P), hygrophano, siccando pallidior (11 C 4 M&P), lenissime viscidulo, glabro, nudo, convexo, demum margine recurvato, 31 mm lato. **Lamellis** ochraceis (“desert” M&P), confertis, angustis, anguste adnexis. **Stipite** albo vel albedo, basin versus brunneo, e basi incrassata apicem versus leniter attenuato, 53×3.5 mm, ad basin 7 mm diam. haud radicante, cavo, superficie sub lente subtiliter farinosa. **Carne** inodora.

Sporis $7\text{--}7.5\text{--}(8.5) \times 3.5\text{--}4.2\text{--}(4.7)\ \mu\text{m}$, nonnullis (e basidiis bisporis natis) $9 \times 4\text{--}4.5\ \mu\text{m}$, punctatis (in juvenilibus ornamentatione nulla visa, in sporis binis ornamentatione frequenter haud manifesta), poro germinativo truncato munitis, bene pigmentatis, quaternis plerumque ellipsoideis, aliis plerumque fusoides. **Hymenio:** Basidiis

13–21 × 6–7 μm, multis tetrasporis, paucis bisporis. Cystidiis nullis. Cheilocystidiis lecythiformibus, 12–19 × 3.5–6 μm, capitulo 2.5–4 μm diam.

Hyphis fibulatis. Tramate hymenophorali typi *Conocybis* modo regulari. Neque hymenio neque tramate ammoniae ope crystalligero. **Epicute pilei** maxime e parte hymeniformi, e cellulis ± 12 μm latis efformato. Dermatocystidiis in pileo nullis. Tegumento stipitis e dermatocystidiis lecythiformibus (capitatis) 12–20 × 3.5–6 μm (capitulo 2–6 μm diam.) et pilis hyphosis longis, hyalinis efformato. Interdum dermatocystidiis reductione partis ventricosae causa e capitulo pedicellato tantum consistentibus.

Ad folia putrescentia in silva tropicali typi terrae firmae solitario.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 25 V 1977, *Singer B 9715* (INPA).

The covering of the stipe corresponds to that of sect. *Mixtae*, but the ornamentation of the spores refers this species to subg. *Ochromarasmus*.

Conocybe tuxtlaensis Sing., spec. nov.

Pileo grisello-ochreo vel ochraceo-subgriseo, hygrophano, glabro, per medium radium pellucide striato et leniter sulcato, convexo, obtuso, 6 mm lato. **Lamellis** subferrugineo-ochraceo-brunneis, acie albis, latis, subliberis, subconfertis vel mediocriter distantibus. **Stipite** pallide brunneo, subglabro, subaequali, 11 × 0.5 mm. **Carne** tenui, inodora.

Sporis 6–7.5 × 3.5–4.3 μm, ellipsoideis vel fusiformibus, levibus, bene pigmentatis (aureo-ochraceis in ammonia), poro germinativo lato, truncato munitis. **Hymenio**: Basidiis 13–15.3 × 5.5–6.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis 12–16.8 × 5.5–7.2 μm, capitulo 2.8–4.3 μm diam., hyalinis, vel partim pallidissime brunneolis. Hymenio ammoniae ope haud crystallophoro. **Hyphis** fibulatis. **Epicute pilei** hymeniformi, ex elementis 21–25 × 12–19 μm, vesiculosos et ± pediculatis, plerumque tenuitunicatis, paucis crassius tunicatis (pariete 0.2–1 μm crassa), pigmento intracellularem brunneolo, dissoluto repletis efformata. Dermatocystidiis in pileo nullis. Tegumento stipitis (in parte mediana stipitis) e dermatocystidiis lecythiformibus et haud lecythiformibus efformato; his subglobosis vel ellipsoideis et breviter angustequae mucronatis aut pilum longum hyphosum, 0.5–1.8 μm diam. emittentibus,

6–9 × 5–7 μm in parte basali inflata; illis ± 17 × 6 μm, capitulo 3.5–4 μm diam.

Ad humum in silva tropicali pluviali solitario.

TYPUS—Mexico, Veracruz, Estación Biológica de los Tuxtlas, 7 km a Monte Pio, 23 VI 1969, *Singer M 8185* (F).

This species belongs in sect. *Mixtae* and is related to *C. xylophila* Sing., but it is not lignicolous; the color of the pileus tends towards gray, the stipe is more distinctly pigmented, and dermatocystidia are absent on the pileus. *Conocybe xylophila* is much more widely distributed than originally anticipated. Aside from Chile, this species also occurs in Venezuela (M. Gariglia & E. Rodrigez, 12 II 1981) and Mexico (*Singer M 8711*, F).

Pholiotina altoandina Sing., spec. nov.

Pileo atroceraceo-brunneo vel castaneo-brunneo (7.5 YR 5/6 Mu), haud viscoso, macroscopice glabro et nudo, subtiliter striato, anguste campanulato vel convexo, haud repando, obtuso, 7.5–13 mm lato. **Lamellis** subconcoloribus, acie pallidioribus, mediocriter confertis, lenissime ventricosis, mediocriter confertis, adnatis vel emarginato-adnatis. **Stipite** pileo pallidior (± 2.5 YR 8/4 Mu), in siccis pallidissime brunneolo et ad basin dilute brunneo, pruinato-pubescente ut minime ad apicem, aequali sed ad basin nonnihil incrassato, 11–55 × 1–1.5 mm, ad basin usque ad 3 mm diam. Velo nullo. **Carne** tenui; odore et sapore debilibus, subfarinaceis fractu.

Sporis 9–11.5 × 5.3–6.8 μm, ellipsoideis, levibus, poro germinativo truncato manifesto munitis, melleo-ochraceis in aqua, intense ferrugineis in KOH, nonnullis sporis (e basidiis bisporis natis) 12–16 × 6.5–8 μm. **Hymenio**: Basidiis 15–30 × (6–)6.5–8.5(–9) μm, tetrasporis, perpaucis vel multis bisporis immixtis, sterigmatibus hyalinis vel ferrugineis. Cystidiis nullis. Cheilocystidiis 19–50 × (5–)7–9 μm, ampullaceis, rarius ventricosis et late mucronatis, apice frequentius cylindraceo quam claviformi et 3.5–5.8 μm lato, obtusis, hyalinis. **Hyphis** fibulatis. Tramate hymenophorali typi *Pholiotinarum* modo regulari. **Epicute pilei** hymeniformi vel demum subirregulariter subhymeniformi, ex elementis 13–32 × 9–14.5 μm, subvesiculosos et frequentur pedicellatis, interdum usque ad 36 × 12.2 μm (dermatopseudoparaphyses?) et dermatocystidiis 49–55(–67) × 7–15 μm cheilocystidiis simillimis vel utrififormibus, rarius sub-

clavatis efformata, omnibus aut hyalinis aut brunneolis, pigmento intraparietali et partim, saepe ad basin cellularum, incrustante. Tegumento stipitis ad eius apicem e dermatocystidiis efformato, his dermatocystidiis pilei similibus. In parte mediana stipitis dermatocystidiis sparsis et minoribus, inconspicuis, sed pilis hyphosis hyalinis, numerosis praesentibus.

Inter muscos, *Leptopodium* aut *Senecionem* supra terram uliginosam in silvis altoandinis et in zona alpina supra 3750 m.

TYPUS—Colombia, Risaralda, Valle de la Quebrada Betania, Hacienda La Sierra, 25 I 1980, *Boekhout 361* (F). Additional collection: Argentina, Tucumán, Cumbres Calchaquies, Quebrada del Matadero, 4500 m alt., 12 I 1963, *De la Sota T 15* (BAFC).

Pholiotina caricicola Sing., spec. nov.

Pileo pallide sordideque brunneo (10 YR 7/6 Mu), hygrophano (siccando 10 YR 8/6 Mu), longe striato in humidis, estriato in siccis, convexo, dein subrependo et debiliter umbonato 3–12 mm lato. **Lamellis** subconcoloribus pileo humido, subdistantibus vel mediocriter distantibus, acie minute flocculosis, albidis, adnatis vel subdecurrentibus. **Stipite** flavido-castaneo ad apicem (10 YR 5/8 Mu), vel castaneo vel atrobrunneo (7.5 YR 3/4 Mu), ex integro pubescente, ad apicem subtiliter albo-pruinoso, plerumque curvato, subfiliformi, abrupte incrassato ad ipsam basin, 7–8 × 0.4–0.5 mm. Velo nullo. **Carne** in stipite dilute grisello-alutacea, in strato externo basis atra, subinodora, sapore “subnullo.”

Sporis 9.5–11(–13.5) × 5.5–6.5(–8.5) μm (eis quam 11 μm majoribus e basidiis oligosporis natis), dilute brunneolo-ochraceis, levibus, ellipsoideis, raro subreniformibus, poro germinativo lato, truncato munitis. **Hymenio:** Basidiis 20–23 × 6–10 μm, tetrasporis, paucis 1–2–3-sporis intermixtis. Cystidiis nullis. Cheilocystidiis ad aciem lamellarum heteromorpham 10–31 × 4–7.5 μm, ampullaceis vel lecythiformibus et tunc subcapitatis (capitulo 2–5.5 μm diam.), constrictione sub capitulo 1.7–4 μm diam. Cystidioliis prope aciem lamellarum 22–25 × 6.5–7 μm, apice 3 μm latis, ampullaceis, obtusis. **Hyphis** fibulatis. Tramate hymenophorali typi *Pholiotinarum* modo regulari, brunneolo-ochraceo. **Epicute pilei** hymeniformi, sed saepe intermittente: hic dermatocystidiis cheilocystidiis simillimis interspersis.

Tegumento stipitis ad apicem stipitis e dermatocystidiis (eis pilei et cheilocystidiis simillimis) et pilis hyphosis filamentosis, interdum apice claviculatis vel subcapitatis, longis, tenuibus efformato; in parte mediana dermatocystidiis perpauca vel nullis praesentibus.

Ad Carices (*Carex pichinchensis* H. B. & K.) in silva andina (*Weinmannia*, *Miconia*, cum multis Riccardiis) gregatim.

TYPUS—Colombia, Risaralda, Santa Rosa de Cabal, Quebrada La Sierra, 3550 m alt., 26 I 1980, *Boekhout 370* (F).

Pholiotina coprophila (Kühner) Sing. var. *exigua* (Sing.) Sing., comb. nov.

BASIONYM—*Bolbitius exiguus* Sing. Ann. Myc. 34: 344. 1936. The type of *B. exiguus* (now at F) differs from *Pholiotina coprophila* var. *coprophila* because of the small size of the pileus (1.2–2.5 mm broad) and stipe (3.0 × 0.5–1.0 mm) and the alpine habitat at between 1950 and 2000 m in the Catalanian Pyrenees.

Pholiotina ealaensis (Beeli) Sing., comb. nov.

BASIONYM—*Galera ealaensis* Beeli, Bull. Soc. Roy. Bot. Belg. 61: 89. 1928 (*Conocybe ealaensis* (Beeli) Watling, Bull. Jard. Bot. Nat. Belg. 43: 189. 1973). This species originally described from tropical Africa has been observed by me in Bolivia, Beni, Guayaramerín, 11 III 1956, *Singer B 1825* (LIL).

Pholiotina maireiaffinis Sing., spec. nov.

Pileo flavido-ochraceo, hygrophano, siccando pallidiore, haud viscoso, in siccis breviter et debiliter sulcato, glabro, convexo, obtuso, centro interdum depresso, 10–15 mm lato. **Lamellis** ochraceobrunneis, confertis vel mediocriter confertis, ventricosis, latis, adnatis. **Stipite** albo, ad apicem minute pruinato, aequali, 8–21 × 1.3–2 mm. Velo nullo. **Carne** alba, interdum in basi stipitis fuscescente, inodora.

Sporis 6.7–8 × 4–5 μm, ellipsoideis vel suboblongis, levibus, pariete 0.3–0.4 μm crassa, duplici, ochraceo-brunnea, levi munitis, poro germinativo apicali ± manifesto, truncato vel haud truncato praeditis. **Hymenio:** Basidiis 17–21 × 6.5–

7.5 μm , tetrasporis. Cystidiis nullis. Cheilocystidiis inter basidis sparsis ad aciem lamellarum, (15–)20–33 \times 5.5–8.5 μm , ampullaceis, apice obtusis et cylindraceis vel superne claviculatis, 2.5–4.5 μm diam. ad apicem, pariete tenui, hyalina. **Hyphis** fibulatis, in stipite hyalinis, haud gelatinosis. Tramate hymenophorali typi *Pholiotina*-rum modo regulari, hyalino. **Epicute pilei** hymeniformi, ex elementis (10–)21–32 \times 10–18 μm , vesiculosus vel late ventricosus, interdum pedicellatus, hyalinis, ad basin interdum ferrugineis atque paucis dermatocystidiis cheilocystidiis simillimis, e. gr. 29 \times 9 μm efformata. Hypodermio cutiformi, e catenulis cellularum multiseptatarum (brevium), latarum, pigmento ferrugineo-ochraceo intraparietali inductorum efformato. Tegumento stipitis ex elementis vesiculosus eis pilei simillimis sed vix hymeniformiter dispositis nec non e dermatocystidiis et pilis hyphosis efformato; dermatocystidiis 24–27 \times 4–7 μm , ampullaceis vel utriformibus; pilis aut e mucrone dermatocystidiorum aut ex hyphis externis stipitis natis et usque ad 45 \times 2 μm , ad basin autem frequenter dilatatis.

Ad terram inter herbas secundum semitam silvestrem gregatim.

TYPUS—USA, Illinois, Ogle County, White Pine State Park, 9 X 1976, *Singer N 7591* (F).

This species is related to *C. mairei* Kühner but differs in larger carpophores, non-lacrimant lamellae, somewhat broader spores, more versiform dermatocystidia of the stipe and fewer dermatocystidia of the pileus. It also comes close to *P. pygmaeoaffinis* (Fr.) Sing. (sensu Lange, Kühner) from which it differs in smaller spores and carpophores.

Pholiotina microspora Sing., spec. nov.

Pileo pallide brunneo, in umbone brunneo, hygrophano, leniter pellucide striato in humidis, glabro, nudo, convexo, umbonato, \pm 13 mm lato. **Lamellis** ochraceis, confertis, mediocriter latis, rotundato-adnatis. **Stipite** albo, ad basin mox brunneo, ad apicem farinoso, subaequali, haud bulboso, 20 \times 1.5 mm. Velo haud appendiculato in margine pilei sed annuliformi; annulo membranaceo, fugaci. **Carne** inodora, in basi stipitis brunnea.

Sporis 6–7.7 \times 3.2–4 μm , ellipsoideis, rarius ovatis, depressione suprahilari instructis vel destitutis, levibus, haud punctatis, lateraliter visis

perpaucis subphaeoliformibus, poro germinativo truncato instructis, dilute ferruginascento-ochraceo-brunneis. **Hymenio:** Basidiis 17–21 \times 4.5–6 μm , tetrasporis. Cystidiis nullis. Cheilocystidiis utriformibus, vel ventricosis-subcapitatis vel cylindrico-capitatis, raro sublecythiformibus, 11–21 \times 3.5–7 μm . **Hyphis** tramatis hymenophoralis regularis fibulatis, subbrunneolis. **Epicute pilei** hymeniformi, ex elementis vesiculosus vel breviter ventricosus, hyalinis, sed ad basin vel in media parte inferiore frequenter ferrugineo-brunneo-incrustatis, 19–40 \times 7–22 μm efformata. Hypodermio pigmento ferrugineo-ochraceo-brunneo-incrustante colorato, cutiformi. Superficie stipitis dermatocystidiis praevisa, ut minime ad apicem stipitis.

Ad truncum delapsus emortuum (*Acer* aut *Quercus*) in silva riparia solitario.

TYPUS—USA, Illinois, Cook County, Harms Woods 16 X 1983, *Singer N 5147* (F).

This North American species can be distinguished from related species by narrow spores. Within the group of *P. intermedia* (Smith) Sing. several species are known to be lignicolous but in these (with the exception of a specimen determined *Naucoria appendiculata* Murr., Murrill *F 18367*), the spores are broader and the cheilocystidia are lecythiform or sublecythiform. In this group, *P. microspora* comes closest to Murrill *F 18367* and *P. intermedia*, but appears to be clearly different from both. Among the species with ampullaceous cheilocystidia, *P. microspora* approaches *P. filipes* (Atk.) Sing. but it is not really related nor is it close to *P. appendiculata* (Lange & Kühner ex Watling) Sing.

Pholiotina striaepes (Cooke) Sing., comb. nov.

BASIONYM—*Naucoria striaepes* (Cooke) Sacc. 5: 839. 1887. Watling correctly considers this different from *P. pygmaeoaffinis*. It was also observed in Austria (leg. Höhnelt sub nom. *Galera sparteae*, FH).

STROPHARIACEAE (Sing.) Sing.

Stropharia viloriana (Dennis) Sing., comb. nov.

BASIONYM—*Hypholoma vilorianum* Dennis, Kew Bull. 15: 135, fig. 97 (p. 133). 1961.

Naematoloma umbrosum (Velen.) Sing., comb. nov.

BASIONYM—*Galera umbrosa* Velen., Opera Bot. Czech. 4: 69. 1947. This species, with “naucorioid” habit, has nonlentiform spores $7.8\text{--}12.8 \times 4.5\text{--}6.5 \mu\text{m}$, spadiceous-brown, with truncate germ pore; it has cheilocystidia $26 \times 7.6\text{--}8 \mu\text{m}$, ampullaceous, and chrysocystidia $38\text{--}65 \times 9\text{--}10.5 \mu\text{m}$; the hymenophoral trama is strictly regular, the basidia bear four spores, the lamellae are broad dark fuscous. The habitat is among mosses (*Polytrichum* and others) in a swampy Alnetum in the shade. The only specimen found (PR) is not the holotype (which apparently has not been conserved) but authentic and corresponds to the original description fairly well. The species is characterized by its colors, the umbo, the variable spores and the small size of the carpophores. *Pholiota aberrans* Smith & Hesler which has some characteristics in common with Velenovsky’s species differs in colors, narrow lamellae, and probably the glutinous stipe.

Psilocybe alpestris Sing., spec. nov.

Pileo brunneolo-ochraceo, hygrophano, siccando dilute gilvo-ochreo, haud viscoso, glabro, margine extremo excepto omnino nudo, levi, semigloboso-convexo, obtuso, $10\text{--}11$ mm lato. **Lamellis** brunneis, confertis vel subconfertis, latissimis, late adnatis vel leniter subdecurrentibus, in vetustis saepe secedentibus et apparenter rotundato-subliberis. **Stipite** pallide brunneo, subglabro, basin versus attenuato, sicco, $13\text{--}14 \times 2\text{--}2.4$ mm. Velo ad marginem extremum pilei floccoso et appendiculato, in stipitis apice subtiliter fibrilloso vel inconspicue annuloso, sed annulo mox evanescente, colore pallido, albido. Mycelio basali albo. **Carne** pallida, partim brunneolo-pallida, in siccis pallida, haud caerulescente, inodora.

Sporis $5.5\text{--}7.3 \times 4.4\text{--}5.5 \times 3.7\text{--}4.5 \mu\text{m}$, late ellipsoideis, lateraliter visis ellipsoideis, frontaliter visis numquam rhomboideis nec subangularibus, levibus, in medio aquatico (neutrali) sine colore lilaceo vel ardesiaco, sed brunneis vel fuscis, fusco-brunneis in KOH, poro germinativo sat lato, truncato instructis. **Hymenio**: Basidiis $6.5 \mu\text{m}$ latis, tetrasporis. Cystidiis nullis. Cheilocystidiis $14.5\text{--}17.8 \times 8.7\text{--}9.3 \mu\text{m}$, in acie lamellarum heteromorpha numerosissimis, late clavato-ventricosis, rotundato-obtusis, hyalinis. **Hyphis** fibulatis. Tramate hymenophorali regulari, haud gelatinoso, fuscidulo e pigmento intraparietali. **Epicute pilei**

cutiformi, ex hyphis filamentosis, appressis, hyalinis, $1.5\text{--}3.7 \mu\text{m}$ latis efformata, tenui. Hypodermio cutiformi ex hyphis in strato superiore hyalinis, in strato inferiore e pigmento intraparietali et incrustante castaneo-brunneo fusco-brunnescentibus, aut $\pm 3.7 \mu\text{m}$ diam. aut latioribus efformato.

Ad terram inter et ad lichenes et muscos in zona alpina extra pineta (*P. mugo*) solitario supra saxa calcarea.

TYPUS—Austria, N.O. Hoch-Schneeberg, ± 1900 m alt., 16 VIII 1979, *Singer C 9168* (WU).

This species, because of its alpine habitat, is comparable to *Psilocybe chionophila* Lamoure and *Geophila velifera* Favre. From the latter it differs in somewhat smaller spores, larger pileus and smaller stipe; from *P. chionophila* it also differs in smaller spores and non-gelatinous epicutis as well as in its habitat on calcareous soil. It differs from both in the shape of the cheilocystidia.

Psilocybe februaris Sing., spec. nov.

Pileo brunneolo-ochraceo (“samovar” M&P), in disco subferrugineo (“gold pheasant” vel “Alamo” M&P), partim venoso-rugoso, praesertim circum umbonem, sed desiccatione sublevi, haud viscoso, glabro et nudo in adultis, mox circum umbonem depresso, 12 mm lato. **Lamellis** brunneis (“oak” M&P), latissimis, ventricosis, subdistantibus, adnatis vel adnexis, ad aciem pallidis. **Stipite** stramineo, stramineo-fibrilloso ex toto, aequali, 22×2 mm. Velo in typo nullo. **Carne** inodora.

Sporis $5\text{--}6 \times 4\text{--}4.4 \times 3.5\text{--}4 \mu\text{m}$, ovatis vel ellipticis frontaliter visis, lentiformibus, ellipticis lateraliter visis, levibus, poro germinativo apicali manifesto, truncato instructis, sordide olivaceo-melleis et crassitunicatis. **Hymenio**: Basidiis $12.5\text{--}15 \times 5.2\text{--}6 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis $17\text{--}17.5 \times 4.5\text{--}5.5 \mu\text{m}$, versiformibus, plerumque utrififormibus, rarius ventricoso-fusoides, obtusis, hyalinis, tenuitunicatis. **Hyphis** fibulatis. Tramate hymenophorali regulari, subhyalino vel pallide melleo, haud gelatinoso, ex hyphis tenuitunicatis, subparallelis vel subintertextis efformato. **Epicute pilei** haud gelatinosa, ex hyphis filamentosis, subhyalinis, intertextis efformata, tenui. Hypodermio fortiter intertexto vel subintertexto, ex elementis $12\text{--}16 \times 9\text{--}10 \mu\text{m}$, fulvo-brunneis, haud incrustatis, hyphis magis elongatis

intermixtis efformato. Tegumento stipitis in eius apice e dermatocystidiis efformato, his cheilocystidiis similibus sed frequenter minoribus.

Ad terram secundum semitam extra silvam in zona tropicali-montana solitario.

TYPUS—Bolivia, La Paz, Nor-Yungas, San Jerónimo, 7 II 1956, *Singer B 976* (LIL).

This species is comparable to *P. physaloides* (Fr. ex Mérat) Qué. sensu Lange, Moser but certainly different, and not even similar to *Agaricus physaloides* Fr. sensu Fries.

Psilocybe pericystis Sing., spec. nov.

Pileo sepiaceo, vix hygrophano, haud viscoso, macroscopice glabro sed sub lente in siccis e dermatocystidiis pubescente, convexo et subumbonato vel umbonato, demum circum umbonem applanato, 8–22 mm lato. **Lamellis** concoloribus, confertis vel subconfertis, latis, adnexis (haud adnatis), ad aciem pallidis. **Stipite** concolori, macroscopice glabro, sub lente subtiliter e dermatocystidiis pubescente, sicco, nudo, aequali, haud radicante, 10–23 × 0.5–1 mm. Velo nullo. Mycelio basali albido, ascendente. **Carne** superficiebus concolori vel paullum pallidiore, haud caerulescente; odore debili, iucundo, fugaci, pomaceo.

Sporis 7.5–10.5 × 6.8–10 × 6.3–7.5 μm, cordiformibus vel rhomboideis (angulis subrotundatis), frontaliter latissimis, levibus, poro germinativo lato, truncato instructis, in aqua pura haud violascentibus nec ardesiacis, in KOH atrofusis. **Hymenio:** Basidiis 25 × 9 μm, tetrasporis. Cystidiis et chrysocystidiis veris nullis. Cheilocystidiis ad et prope aciem lamellarum 45–67 × 8–13 μm, plerumque utriformibus, aliis subcylindratis vel anguste ventricosis, hyalinis vel subhyalinis. **Hyphis** fibulatis, haud gelatinosis. Tramate hymenophorali regulari, hyalino vel pallide brunneo, vel fusco e pigmento intraparietali, lenissime incrustante, ex hyphis plerumque inflatis efformato. **Epicate pilei** e dermatocystidiis erectis saepe agglutinatis in fasciculis, forma sua cheilocystidiis similibus, hyalinis vel subhyalinis, numerosis, usque ad 85 μm longis et interdum 4 μm tantum latis efformata. Hypodermio cutiformi, haud gelatinosa, tenui, ex hyphis filamentosis hyalinis vel subhyalinis efformato in strato superiore, in strato inferiore ex hyphis latoribus, pigmentatis (pigmento fusco, ei tramatis hymenophoralis simili, sed obscuriore et magis manifeste incrustante).

Tegumento stipitis e dermatocystidiis eis pilei simillimis efformato.

Ad terram in margine viae silvaticae in silva primaria typi terrae firmae gregatim vel caespitose.

TYPUS—Brazil, Amazonas, 25 km N of Manaus, Reserva Ducke, 28 VI 1978, *Singer B 11261* (INPA).

Among the species of sect. *Psilocybe* this species is recognized by the combination of a dry pileus (epicutis not gelatinous) and comparatively voluminous spores which are very broad and rhombic, furthermore by the numerous dermatocystidia of the pileus and the extremely sparse pleurocystidia which are not differentiated from the non-ampullaceous cheilocystidia. Our Brazilian species seems to be close to *P. acutipilea* (Speg.) Guzmán, from which it differs in colors and shape of the carpophores as well as in broader spores and larger cheilocystidia which are different in shape.

Melanotus decapitatus Sing., spec. nov.

Pileo dilute ochraceo in siccis, tomentoso, margine rotundato-incurvo, subcirculari, convexo, in siccis 2–6 mm lato. **Lamellis** brunneis vel dilute fuscis, confertis, mediocriter latis. **Stipite** sicco ochraceo-brunneo, parvo, excentrico vel laterali. Mycelio basali albo.

Sporis 6–7 × 4.5–5.3 × 3.5–4.3 μm, rotundato-subhexagonis frontaliter visis, poro germinativo apicali, lato, truncato instructis, omnibus manifeste lentiformibus, levibus, umbrinis vel sordide melleis. **Hymenio:** Basidiis 14–18 × 6.5–7 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham 10–30 × 3.5–6 μm, apice 2–23 × 1.5–2.5 μm cylindrico, fusoideo-ampullaceis, pedicellatis, apice filiformi vel attenuato, hyalinis. **Hyphis** haud gelatinosis, fibulatis. Tramate hymenophorali regulari, hyalino. **Epicate pilei** ab hypodermio vix differente pigmento minus incrustante, ex hyphis ascendentibus laxis, haud gelatinosis efformata. Hypodermii hyphis quam epicutis densius brunneo-incrustatis, pariete hyalina vel subhyalina.

Ad ramulos (apparenter Bambuseae cuiusdam).

TYPUS—Venezuela, Miranda, (near border of Distrito Federal), La Silla, Asiento de la Silla, 18 VI 1971, *Dumont Ve 135* (NY).

This differs from other tomentose species in the

strongly lentiform spores and the ampullaceous cheilocystidia. It also differs from *M. caricicola* (Orton) Guzmán in the absence of a gelatinized zone underneath the epicutis and the spores which are subangular when seen frontally.

***Melanotus dumontii* Sing., spec. nov.**

Pileo sicco pallide avellaneo, subpallido, leniter et minutissime appresse fibrillosulo vel glabrescente, haud viscoso, haud sulcato, circumferentia ovali, 3 mm lato. **Lamellis** subviolaceo-brunneis vel fusco-brunneis in maturis, angustis, confertis vel confertissimis, acie albis, adnatis. **Stipite** albo, forma irregulari, saepe compresso, sublaterali, 1 × 0.5 mm. Velo marginali ad pileum juvenilem sericeo, pallido, fugacissimo, ad stipitis apicem tenui, haud annuliformi, fugaci. Mycelio albo supra substratum abundante. **Carne** albo.

Sporis 6–7 × 4.2–4.6 × 4–4.3 μm, ellipsoideis sed ad latus interius minus convexis, vix vel minime lentiformibus, levibus, poro germinativo lato truncato instructis, bene pigmentatis, sepiaceo-fuscis (KOH), sed ammoniaci ope pallidioribus, raro lateraliter visis subreniformibus. **Hymenio:** Basidiis 13.5–15 × 6–6.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham et prope aciem lamellarum numerosissimis, 20–38 × 4.8–6 μm ampullaceis vel ampullaceis-subcapitatis, raro fusoido-ventricosis, prope marginem pilei frequentius subcapitatis, parte ventricosa inferiore et apice tenui elongato, ventricosis plerumque brevioribus, tenuitunicatis, rarissime firme tunicatis, omnibus hyalinis, collo 2–3 μm diam., capitulo 3.2–5.5 μm diam. **Hyphis** fibulatis, in pileo frequenter moderatim inflatis sed in nulla parte subcellulariter dispositis, haud gelatinosis. Tramete hymenophorali regulari, hyalino. **Epicute pilei** cutiformi, ex hyphis filamentosis horizontalibus 2–5 μm diam. efformata, hyalina, pigmento intraparietali et incrustante nullo.

Ad culmos *Chusqueae* spec.

TYPUS—Colombia, Cundinamarca, between Fomenque and Calera, 10 VII 1974, leg. *Dumont, Haines, Idrobo & Velasquez, Dumont CO 1008* (F).

The cheilocystidia are longer in this species than in *M. musacearum* Sing.

***Melanotus heteroloma* Sing., spec. nov.**

Pileo brunneolo-albido, subpallido, levi, glabro sed ad marginem subtomentoso, in parte posteriore saepe mycelio oblecto, convexo, obtuso, 5.5–6.5 mm lato. **Lamellis** in siccis brunneis acie albis, latis, confertis, rarius subconfertis, adnatis. **Stipite** albo, albido, interdum siccando fuscescente, glabro vel mycelioso, fortiter excentrico vel sublaterali, saepe agglutinato ad lamellas et marginem pilei, interdum curvato, usque ad 3 × 0.7 mm. Mycelio basali albo, partim brunnescente siccando. Velo nullo.

Stipite (5–)5.2–5.5 × 4–4.5 × 3.5–3.8(–4) μm, ellipsoideis, ± lentiformibus, levibus, crassitunicatis, poro germinativo lato, truncato instructis, biso-melleis, (olivaeco-) fuscis. **Hymenio:** Basidiis 15–16 × 5.5–6.5 μm, (2–)4-sporis. Cystidiis nullis. Cheilocystidiis 17–30 × 3.5–6.5 μm, ampullaceis, collo 1.5–3 μm lato, frequenter, praesertim in regione prope stipitem, clavicularibus vel subcapitatis et sic ad ipsum apicem 2–4 μm diam., ad apicem saepe resinoso-incrustatis, incrustatione hyalina, globulosa, caduca, numquam acutis, omnibus hyalinis. **Hyphis** haud gelatinosis, fibulatis, subhyalinis vel pallide stramineis, Tramete hymenophorali regulari. **Epicute pilei** trichodermiali, ex elementis ascendentibus et erectis hyphalibus firme, rarius subcrasse tunicatis (pariete usque ad 1 μm crassa), subhyalina, sed ex incrustatione ochracea granulati ochraceis, 2–7.5 μm latis efformata. Versus marginem pilei nec non ad aciem lamellarum prope epicutem pilei (ad marginem) cellulis terminalibus hypharum cystidiformibus; his dermatocystidiis (aut cheilocystidiis secundi typi) cheilocystidiis ceteris similibus, sed usque ad 35 μm longis et capitulo usque ad 5 μm lato.

Ad ramum ligneum emortuum delapsum dicotyledoneum in silva tropicali-montana gregatim.

TYPUS—Bolivia, La Paz, Nor-Yungas, Coroico, 4 II 1956, *Singer B 867* (holotype BAFC; isotype LIL).

This species differs from related ones that grow on dicotyledonous wood because of the small spores, the lack of grayish colors, the trichodermial epicutis, the incrusting pigments, the frequently subcapitate cheilo- and dermatocystidia, and the absence of pleurocystidia. Otherwise, *M. matrisdei* Sing. is similar, but this latter species has strongly

lentiform spores and not or scarcely incrusting pigments in epicutis and hypodermium.

Melanotus matrisdei Sing., spec. nov.

Pileo albo, in herbario brunnescente, macroscopice glabro, sub lente in margine sicco subto mentoso, levi, circumferentia subcirculari vel rhombica vel ovali, convexo, dein repando, 6–12 mm lato. **Lamellis** dilute griseis vel lilaceo-griseis in vegetis, in siccis brunneis, satis angustis vel latis, acie pallidioribus, confertis vel subconfertis, adnatis. Sporibus in massa brunneolo-lilaceis. **Stipite** albo, in herbario brunnescente, macroscopice glabro, e disco basali minuto sordide albo et subto mentoso nato, fortiter excentrico et ad marginem extremum pilei agglutinato. Velo in adultis nullo. Mycelio basali albo.

Sporis 5–6.3 × 4–5 × 3–4 μm, frontaliter visis breviter ellipticis, vel rotundato-rhombicis, fortiter lentiformibus, lateraliter visis ellipticis, levibus, poro germinativo lato, truncato instructis, crasse tunicatis, episporio tenui sepiaceo, ceterum biso-melleis (KOH), paucis macrosporis usque ad 7 × 4.7 μm praesentibus. **Hymenio:** Basidiis 14–18 × 5.5–7 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis primum versiformibus et filiformibus et anguste ampullaceis vel anguste ventricosis vel frequenter subcapitatis (constrictione 1–2 μm diam., capitulo 2–4 μm diam.), 10–23 × 4–6 μm, dein omnibus filiformibus vel plerumque filiformibus, 1–2 μm latis, interdum usque ad 4 μm inflatis, hyalinis, frequenter longissimis, subhyphosis. **Hyphis** hyalinis, fibulatis, haud gelatinosis. Tramate hymenophorali regulari. **Epicute pilei** cutiformi, hyalina vel subhyalina, ex hyphis angustis, 2–5 μm crassis efformata, sat profunda, superficialibus singulis vel fasciculatim ascendentibus et interdum cellula terminali cystidiformi, his dermatocystidiis e. gr. 12 × 4.5 μm, cheilocystidiis simillimis.

Ad quisquilias monocotyledoneas in silva tropicali inundabili (mox post inundationem recedentem fructificans), gregatim.

TYPUS—Bolivia, Amazonas, Pando, Madre de Dios, San Luis, 28 III 1956, *Singer B 2313* (holotype, BAFC; isotype, LIL).

This species belongs to a stirps which was combined into a single species (*M. alpiniae* [Berk.] Pilát) by Horak (1977). It differs from the other

species in several characters and these other species differ from each other by characters not taken into consideration by Horak. *Melanotus matrisdei* is the only one that grows in várzea conditions.

Melanotus musacearum Sing., spec. nov.

Pileo griseolo-albo vel subargillaceo-albo semper subpallido, haud hygrophano, in siccis subcinnamomeo-albo, haud viscido, margine incurvo, demum substricto, evelato, levi, glaberrimo, 15–21 mm lato, haud circulari sed subcirculari vel rhombiformi vel ovato, saepe irregulari vel lobato, convexo, demum frequenter applanato. **Lamellis** griseis, confertis vel confertissimis, acie partim pallidis, in siccis sepiaceo-fuscis e sporibus, angustis, adnato-subdecurrentibus. **Stipite** albo vel albido, basin versus frequenter brunnescente, macroscopice glabro vel subglabro, sed frequenter mycelio albo usque ad apicem oblecto, sub lente ad apicem subtiliter farinoso-subflocculoso, glabrescente, levi, subaequali, solido, 2–3.8 × 0.9–2 mm. Velo in juvenilibus ad apicem stipitis et marginem pilei albo sed summopere evanescente, fugacissimo. Mycelio basali albo. **Carne** moderatim tenui, alba, immutabili, inodora.

Sporis 5.3–7.5(–8.2) × 4–5.5 × 3.8–4.2 μm (macrosporis 7–8.2 × 5–5.5 × 5–5.5 μm), ovatis vel breviter ellipticis frontaliter visis, breviter ellipticis vel ellipticis lateraliter visis, haud lentiformibus vel nonnullis leniter lentiformibus, levibus, moderatim crasse tunicatis, poro germinativo truncato instructis, episporio subspadiceo tenui, biso-melleis ceterum, nonnullis subolivaceis (KOH), in vegetis subviolaceis sec. Höhnell (H₂O). **Hymenio:** Basidiis 14–17 × 4.5–6.3 μm, (2-)4-sporis vel omnibus tetrasporis (et tunc macrosporis haud praesentibus). Cystidiis nullis. Cheilocystidiis (10-)13–23 × 2–6.5 μm, plerumque 16–17.5 × 4–5.5 μm, plerumque ampullaceis, interdum filiformibus vel utrififormibus vel fusoides intermixtis, apice plerumque 2–3 μm diam., raro subcapitato vel subcylindraceutis ex toto, omnibus hyalinis, tenuitunicatis. **Hyphis** in pilei tramate hyalinis, fibulatis, haud gelatinosis, tenuitunicatis, paucis crassiuscule (usque ad 1 μm) tunicatis, intertextis, nonnullis inflatis. **Epicute pilei** cutiformi, hyalina, eius hyphis filamentosis, repentibus, paucis ascendentibus; dermatocystidiis paucis, exiguis, e. gr. 8 × 3 μm, ampullaceis, perpaucis interdum subvesiculososis e. gr. 24 × 12 μm, pedicellatis. Hypodermio cutiformi, ex hyphis

subparallelis, haud incrustatis, in siccis brunneolis sed pigmento haud incrustatis efformato.

Ad folia et stipulas Musacearum in silvis et plantationibus tropicalibus gregatim.

TYPUS—Brazil, Bahia, Urucuca, 8 VI 1978, *Singer B 11144* (INPA). Additional collections: Mexico, Michoacán, San José de Purua, 1500 m alt., 8 VIII 1969, *Singer M 8983* (F); “Java”, Buitenzorg, *Höhnell* (FH).

The collection from Java is identified as *M. musacearum* with some doubt because the pileus was described as grayish-white to grayish-violet and sessile. Nevertheless, because of the identical microscopical characteristics and the habitat on Musaceae, it seems to belong here, but *M. bambusinus* Pat. should be compared. *Melanotus musacearum* differs from *M. musaecola* (Berk. & Curt.) Murr. in narrow lamellae. The type of *M. musaecola* has broad, pale fuscous, adnexed lamellae. Both these species are often confused with *M. eccentricus* (Murr.) Sing.

Melanotus pecten (Berk. & Curt.), Sing. comb. nov.

BASIONYM—*Agaricus pecten* Berk. & Curt., Ann. Mag. Nat. Hist. III. 4: 291. 1859. This species is close to *M. psychotriae* and *M. subcuneiformi* but independent. I have studied the type (κ). The ochraceous spores remind one of *Pleuroflammula*.

Pholiota cortinata (D. C. ex Fr.) Sing., comb. nov.

BASIONYM—*Agaricus cortinatus* D. C. ex Fr. (Syst. Myc. 1: 147. 1821) *Epicrisis* p. 186. 1838. Our specimen [Spain, Catalonia, Col de Cera, Vallromanes, on sandy earth, mixed with fragments of roots of herbaceous plants and small pieces of rotting wood, leg. Honrubia, 22 X 1979, *Singer C 9567* (F)] corresponds exactly and fully to the original diagnoses and is to be considered neotype of both De Candolle's and Fries's species, i.e., De Candolle's, if the 1983 Code is applicable. Fries is not a “sanctioning” author since he did not recognize De Candolle's species as such in 1821 nor in 1832.

Spores $5.5\text{--}6.5 \times 3.5\text{--}3.7 \mu\text{m}$, smooth, some with a nontruncate germ pore, chrysocystidia rather numerous, hymenopodium differentiated but scarcely gelatinized; epicutis, an ixotrichoder-

mium. These data refer *P. cortinata* to sect. *Albivelatae* Smith & Hesler.

Pholiota irazuensis Sing., spec. nov.

Pileo atrobrunneo (prope “Vandyke Br” M&P), fortiter fibrilloso-squamuloso vel squamuloso-imbricato, convexo, in siccis subumbonato, 19 mm lato. **Lamellis** dilute carneo-cremeis, lamellulis paucis intermixtis, confertis, sat latis, adnatis. **Stipite** dilute brunneo, longitudinaliter subtiliter fibrilloso, cylindraceo, haud radicante, 40×4 mm. Annulo nullo. Mycelio basali albo. **Carne** alba.

Sporis $9\text{--}12.5 \times (4\text{--})4.5\text{--}6 \mu\text{m}$, subellipsoideis vel oblongis, raro leniter phaseoliformibus lateraliter visis, depressione vel applanatione suprahilari instructis vel destitutis, poro minutissimo vel callo apicali destitutis vel instructis sed numquam truncatis, dilute ochraceo-brunneis, inamyloideis. **Hymenio**: Basidiis $25\text{--}29 \times 8\text{--}8.5 \mu\text{m}$, tetrasporis. Cystidiis ad aciem et latera lamellarum sat numerosis, ventricosis vel ampullaceis, in ampullaceis collo brevi, rarius longo, frequenter subcapitato, ventricosis ad apicem subacutis vel frequentius obtusis, pariete $0.2\text{--}0.4 \mu\text{m}$ crassa instructis, ad apicem nonnumquam sparse muricatis, in NH_4OH et KOH hyalinis, iodi ope contentu brunneolo-hyalino gaudentibus. Hymenio in ammonia crystallophoro (crystallis eis in *Conocybe tenera* productis simillimis). **Hyphis** in tramate hyalinis, fibulatis, sed nonnullis septis secundariis et paucis primariis simplicibus visis, omnibus tenuitunicatis, inamyloideis. Tramate hymenophorali hyalino vel subhyalino (in siccis interdum pallidissime fuscidulo), regulari. Hyphis oleiferis praesentibus, $\pm 4.5 \mu\text{m}$ latis. **Epicute pilei** ex hyphis aggregatis ascendentibus in squamas efformata, his hyphis e cellulis elongatis, $5\text{--}15 \mu\text{m}$ latis, firme, raro crassiuscule tunicatis, brunneis e pigmento intraparietali sed nullo modo incrustante. Hypodermio cutiformi, ex hyphis eis epicutis simillimis efformato. Tegumento stipitis ex hyphis appressis vel ascendentibus efformato; dermatocystidiis nullis.

Ad terram vulcanicam prope quercum in zona superiore subalpina.

TYPUS—Costa Rica, Cartago, Reventado Irazú, 3000 m alt., October 1982, *Gómez 18580* (F).

This species belongs in subg. *Plocoloma* and is related to *P. blechni* Sing. in Sing. & Moser.

Pholiota varzeae Sing., spec. nov.

Pileo ferrugineo ("henna" M&P), centro rubro-brunneo vel brunneo-purpureo (inter "mascara" et "Maracaibo" M&P), demum pallescente usque ad dilutum alutaceum colorem, sicco, sub lente subtiliter granulati-rivuloso, convexo et umbonato, dein subumbonato vel centro depresso, 21–30 mm lato. **Lamellis** griseis ("Cuban sand" vel "atmosphere" M&P), fractu brunnescentibus ("kis kilim" M&P), acie albis, confertis, adnatis vel rotundato-adnatis. Sporis in massa paullum obscurioribus quam "falcon" (M&P). **Stipite** albo, glabro vel subglabro, sicco, subaequali vel leniter apicem versus attenuato, sed ad basin plerumque leniter incrassato nec bulboso, 22–46 × 2.5–7.5 mm. Velo annulari mediano, annulo haud sulcato, albo, membranaceo. Rhizomorphis albis praesentibus. **Carne** alba; odore et sapore mitibus.

Sporis 5.5–7.5(–9.5) × 3.7–4.3(–4.7) μm , ovoideis vel commae forma similibus vel cuneiformibus, lateraliter visis subreniformibus vel depressione suprahilari instructis, poro germinativo manifesto vel vix manifesto, semper angusto et haud truncato munitis, in aqua et ammonia et KOH ochraceis, sed in accumulationibus in KOH laete ferrugineo-brunneis, guttula exigua globosa centrali munitis, inamyloideis. **Hymenio:** Basidiis 14.2–20.5 × 5.5–7 μm , tetrasporis. Cystidiolis sparsis vel numerosis, praesertim prope aciem lamellarum, 18–20 × 5.5–7.5 μm , utrififormibus, rarius ventricosus-subclavatis, hyalinis, tenuiparietalibus, 1–4 appendiculis digitiformibus apicalibus ornatis. Chrysocystidiis ad aciem et latera lamellarum sat numerosis, 26–30 × 7.5–15 μm , ventricosis et saepe mucronatis, vel ampullaceis, corpusculis granulosis in NH_4OH flavis internis munitis, tenuitunicatis, rarius leniter crassiuscule (usque ad 1 μm) tunicatis, parietibus hyalinis, rarius pallide ochraceis, nonnullis ex eis ammoniae ope caerulescentibus vel virescentibus. Cheilocystidiis veris haud differentiatis. **Hyphis** fibulatis. Tramate hymenophorali regulari ex hyphis hyalinis subparallelis vel intertextis efformato, hymenopodio haud gelatinoso ad latera oblecto. Omnibus parietibus hypharum tenuibus vel sat tenuibus. **Epicute pilei** trichodermiali, e catenulis cellularum plerumque elongatarum cylindracearum vel ventricosarum vel clavatarum efformata, sed ad apicem et basin catenae nonnullis cellulis subglobosis e. gr. 10–13 × 8.5–11.7 μm immixtis (elongatis 26–33 × 7–12.5 μm). Hypodermio haud gelatinoso, cutiformi vel subtrichodermiali, hyalino vel partim debiliter pigmentato, cellulis non-

nullis subsodiametricis intercalatis. Pigmento in ammonia ochraceo, intracellulari, numquam incrustante. Strato velari epicuti superimposito intermittente, hyalino, cutiformiter fere disposito.

Ad lignum Palmarum et arborum Dicotyledonum delapsum vel emortuum, in silva tropicali typi varzeae (inundabili) gregatim.

TYPUS—Brazil, Amazonas, Paraná do Januacá, Lago do Castanho, 23 V 1980, *Singer B 12177* (F).

This species belongs in sect. *Albivelatae* and is related to *P. cubensis* Earle.

Phaeomarasmium littoralis Sing., spec. nov.

Pileo dilute siennicolori, spinulis exiguis flocculosis erectis hirsuto, margine lanato-fibrilloso, hic non squarrosulo, sicco, semigloboso, dein convexo, obtuso vel subumbonato, 7–11 mm lato. **Lamellis** ochraceobrunneis, acie albidoflocculosis, subconfertis vel mediocriter confertis, latissimis, ventricosis, anguste adnexis. **Stipite** pileo pallidiori vel albidio, nonnullis fibrillis brunneis lanoso sed glabrescente infra zonam annularem fugacem, ad apicem glabro vel subglabro (tegumentis neque stipitis neque pilei detersibilibus), aequali vel basin versus leniter attenuato, interdum ad ipsam basin bulbuloso, 12–26 × 1–3.5 μm . Velo zonam fibrosam vel lanosam mox fragmentatam formante, dein haud manifesto.

Sporis 8.5–11 × 4.5–6 μm , ellipsoideo-phascoliformibus, paucis ad latus interius haud concavis sed applanatis, rarius oblongis, ferrugineo-ochraceo-brunneis, levibus, poro germinativo subnullo vel inconspicuo, angusto, haud truncato instructis. **Hymenio:** Basidiis 18–29.3 × 7–9 μm , hyalinis, nonnullis brunneolis, tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham densis, 15–54 × 6.5–12 μm , utrififormibus vel clavatis, rarius late vel anguste ventricosis vel ampullaceis, hyalinis, haud flexuosis, raro geniculatis, tenuitunicatis et optice "vacuis." **Hyphis** fibulis grandibus instructis, haud gelatinosis. **Epicute pilei:** Spinulis e catenulis erectis parallelis cellularum ± elongatarum efformatis, his cellulis in parte superiore spinularum omnibus elongatis et tenuiter pigmento incrustatis, cellula terminali ellipsoidea et 28–48 × 12–21 μm aut ampullacea et e. gr. 40–55 × 18–21 μm , aut cylindracea et e. gr. 36–43 × 6.5–8 μm , in parte inferiore spinularum aut elongatis ut in parte superiore spinu-

larum aut, rarius, nonnullis cellulis subsodiometricis (c. gr. $20 \times 15\text{--}17 \mu\text{m}$) intermixtis, hic incrustatione ferrugineo-brunneo magis conspicua, in omnibus pigmento intraparietali etiam praesente, pariete subtenui, raro incrassata.

Ad terram humoso-sabulosam frequenter Cyanophyceis permeatam, haud umbrosam et soli expositam.

TYPUS—Costa Rica, Guanacaste, 7 km NW of Bagaces, 80 m alt., October 1982, *Gómez 18682* (F). Additional collection: same locality, 27 VII 1986, *Singer B 14115* (F).

This species belongs in the neighborhood of *P. limulatus* (Fr. ex Weinm.) Sing. but has narrower cheilocystidia; it also differs strongly in its habitat.

Phaeomarasmius mercedis Sing., spec. nov.

Pileo aurantio-cinnamomeo, minute brunneo flocculoso, praesertim in centro, ad marginem striato, convexo, obtuso, sicco, 6 mm lato. **Lamellis** cinnamomeis, tenuiter pallide marginatis, latis sed haud ventricosis, horizontalibus, mediocriter confertis vel subconfertis, adnatis. **Stipite** ochreo-alutaceo, fibrillis sparsis brunneolis infra veli adhaesionem ornato, ad apicem pruinato, aequali, 7×0.7 mm. Velo annuliformi, annulo apicali, tenui, pallide alutaceo, fugaci. **Carne** alutaceo-pallida, tenui, inodora.

Sporis $7\text{--}7.8\text{--}(8) \times 5\text{--}5.5 \mu\text{m}$, ellipsoideis, paucis ovoideis, rarissime ad latus interius lenissime depressis, plerumque omnibus lateribus convexis, sed interdum applanatione suprahilari, raro depressione suprahilari instructis, levibus, poro calloque apicalibus destitutis, dilute ochraceo-brunneis, episporio tenui brunneo et endosporio hyalino instructis, tunica tota usque ad $0.5 \mu\text{m}$ crassa, inamyloideis. **Hymenio**: Basidiis $18\text{--}19 \times 6\text{--}6.7 \mu\text{m}$, 2–3-sporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham $19\text{--}51 \times 4\text{--}8 \mu\text{m}$, anguste ventricosis vel utriformibus (i.e., supra medium leniter constrictis), hyalinis, tenuitunicatis. **Hyphis** haud gelatinosis, fibulatis. Tramate hymenophorali ochraceo-hyalino vel hyalino (NH₄OH), regulari, hyphis plerumque filamentosis. **Epicute pilei** trichodermiales, e catenulis cellularum hypharum efformata, his in parte inferiore trichodermii anguste cylindraceis vel inflatis sed elongatis ($14\text{--}45 \times 4\text{--}22 \mu\text{m}$), cellulis terminalibus autem dimorphis (1) sphaerocystoideis $18\text{--}23 \times 15\text{--}18 \mu\text{m}$, pariete firma, haud crassa, brunneolo-

incrustatis, (2) cylindraceis vel clavatis, rarius apicem versus attenuatis $21\text{--}25 \times 6\text{--}8.5 \mu\text{m}$, pariete firma vel crassiuscula (usque ad $1.2 \mu\text{m}$ crassa), plerumque brunneolo-incrustata. Hypodermio cutiformi, tenui, ex hyphis elongatis, $3\text{--}6 \mu\text{m}$ latis, \pm brunneolo-incrustatis efformato.

Ad terram inter muscos, in silva tropicali-montana.

TYPUS—Colombia, Cundinamarca, Bojacá, Bosque de la Mercedes, 8 IV 1968, *Singer B 6023* (F).

This species seems intermediate between several groups of the genus *Phaeomarasmius* because the hyphae of the epicutis are both thin- and thick-walled and the terminal cells are either globose or elongated. It seems to be related to *P. malvacearum* Sing. and *Pholiota minutula* Smith & Hesler.

Phaeomarasmius microspilus (Romagnesi ex Romagn. apud Romagn. & Kühner) Sing., comb. nov.

BASIONYM—*Naucoria microspila* Romagn., ex Romagn. apud Romagn. & Kühn., Bull. Soc. Nat. Oyonnax 10–11, Mem. hors série 2: 5. 1957.

Phaeomarasmius oligosporus Sing., spec. nov.

Pileo mustelino vel rufo-castaneo, per tres quartas partes radii pellucide striato, haud viscoso, \pm subhygrophano, convexo, obtuso, interdum umbilicato, 10–15 mm lato. **Lamellis** ferrugineo-ochraceis vel brunneis, subconfertis, mediocriter latis vel latis, pallide marginatis linea intermittente sub lente, adnatis. **Stipite** brunneo sed pallidior quam pileus, subglabro, aequali vel subaequali, $18\text{--}30 \times 1.7\text{--}5$ mm. Velo primum annuliformi vel subannuliformi, in stipite apicali, in pileo flocculoso-fibrilloso per totam superficiem, albo vel albido, in juvenilibus abundante, dein sparso, annulo fugaci, in adultis pileo et stipite subnudo vel fragmentis appressis veli oblecto. Mycelio basali albido, lanoso, abundante. **Carne** inodora.

Sporis $6.7\text{--}8.5 \times 4.2\text{--}6 \mu\text{m}$ (nonnullis macrosporis usque $10.5 \mu\text{m}$ longis aut $7.2 \mu\text{m}$ latis), multis lentiformibus, frontaliter ellipticis vel ovatis, lateraliter reniformibus vel inverse reniformibus vel depressione suprahilari gaudentibus, levibus, poro germinativo destitutis, pro ratione haud crasse

tunicatis, episporio tenui, brunneo et endosporio subhyalino instructis, in KOH colore Tubariarum gaudentibus sed nonnullis melius pigmentatis et ochraceobrunneis, haud collabentibus, inamyloideis. **Hymenio:** Basidiis 14–28 × 4.5–7.5 μm, 1–2–3–4-sporis vel 1–2-sporis, (tetrasporis semper pro ratione paucis), sterigmatibus (3.5–)6–7 μm longis, sed in tetrasporis brevioribus, in monosporis 10–17 μm longis et simplicibus aut bifurcatis. Cystidiis nullis. Cheilocystidiis (18–)35–74 × (4–)5.5–7 μm, utriformibus, ventricosis, filamentosis, obtusis, raro subacutis, hyalinis, tenuitunicatis, acie lamellarum ex eis subheteromorpha (basidiis intermixtis). **Hyphis** hyalinis vel pallide ochreis, haud gelatinosis, in pileo radialiter dispositis, in stipite subparallelis. Tramate hymenophorali regulari, ex hyphis 2.3–6 μm latis, sed hinc inde usque ad 18 μm inflatis. **Epicute pilei** e cellulis breviusculis vel subsodiametricis (raro), singularibus vel fasciculatis, paucis angustioribus fusoides (e. gr. 22 × 6 μm) intermixtis sed plerumque 11–28 × 7–16 μm, ventricosis vel clavato-ventricosis, rotundatis, rarius mucronatis monostratis vel hinc inde bis-tratis efformata, omnibus his pariete firma vel subcrassiuscula, rarius tenui praeditis et permultis ex eis manifeste pigmento brunneo incrustatis. Hypodermio cutiformi, ex hyphis subintertextis, subhorizontalibus vel horizontalibus, cylindraceis vel inflatis, aequaliter pigmentatis efformato. Tegumento stipitis e nonnullis hyphis ascendentibus efformato, in medio stipitis dermatocystidiis nullis.

Ad lignum putridum dicotyledoneum in silva tropicali vel subtropicali, solitario vel gregatim.

TYPUS—Brazil, Sao Paulo, Serra de Cantareira, Reserva Florestal do Horto Florestal, 17 XII 1964, *Singer B 4122* (F). Additional collection: Bolivia, Beni, Vaca Diez, Riberalta, alt. 170 m, 30 III 1956, *Singer B 2355* (BAFC, LIL).

This species is related to *P. confragosuliformis* Sing. and by its characters shows clearly the affinity between the tubarioid and naucorioid species of the genus *Phaeomarasmium*.

Phaeomarasmium pascuus Sing., spec. nov.

Pileo ochraceo-brunneo vel rufocastaneo, innate subtiliter fibrilloso sub lente sed macroscopice glabro vel subglabro, convexo, obtuse subpapillato, margine sublobato, 8 mm lato. **Lamellis** brunneis, albo-marginatis, sat latis, subconfertis,

adnatis vel adnato-subdecurrentibus. Sporis in massa dilute cinnamomeo-ferrugineis. **Stipite** cinnamomeo-pallido, glabro, annulato, aequali, 12 × 1.2 mm. Annulo albo, membranaceo, apicali. **Carne** inodora.

Sporis 6.5–8.5 × 4.7–6 μm, plerumque 8–8.5 × 5–5.3 μm, ellipsoideis, depressione suprahilari praeditis et frequenter subreniformibus, levibus, pariete pro ratione tenui, duplici, inamyloidea instructis, ochraceo-brunneolis. **Hymenio:** Basidiis 21–33 × 6–8.5 μm, tetrasporis. Cystidiis nullis. Cheilocystidiis e. gr. 24–26 × 7–8.5 μm, admodum versiformibus, prope marginem pilei saepe breviter basidiomorphis vel subampullaceis, alii, praecipue stipitem versus majoribus, 45–54 × 7.5–11 μm, ad basin frequenter ventricosis et sub apicem claviformem constrictis (constrictione 4–6 μm diam.), hyalinis. **Hyphis** fibulatis, haud gelatinosis. **Epicute pilei** ex hyphis repentibus vel in parte terminali ascendentibus 2–16(–20) μm latis, fortiter pigmento ferrugineo-ochraceo-brunneo incrustatis, praesertim ad septa, elongatis vel subfiliformibus efformata; ceterum, marginem versus dermatocystidiis sat numerosis 26–28 × 6–7 μm, versiformibus, e. gr. clavatis vel cylindraceis vel vesiculosis vel ampullaceis vel capitatis (et tunc capitulo usque ad 8 μm diam.), hyalinis, haud incrustatis. Hypodermio brunneo, pigmento incrustato.

Ad terram inter herbas et gramina in pascuis apertis palustribus (marshes).

TYPUS—Uruguay, Maldonado, 27 V 1966, *Singer B 4181* (BAFC).

This species is related to *P. terrigenus* Sing. and differs from the latter in a well-developed annulus and longer cheilocystidia.

Phaeomarasmium proximans (Smith & Hesler) Sing., comb. nov.

BASIONYM—*Pholiota proximans* Smith & Hesler, N. Am. Spec. Phol. p. 70. 1968.

Phaeomarasmium terrigenus Sing., spec. nov.

Pileo ochraceo-brunneo, hygrophano, in siccis fibrillis appressis ochraceo-brunneolo-pallidis per totam superficiem oblecto, haud viscoso, levi, convexo, in siccis subumbilicato, 4–6 mm lato. **Lamellis** siccis intense ferrugineis, in vegetis pileo

concoloribus, latissimis, subdistantibus, adnatis. **Stipite** pileo aut lamellis concolori, glabro vel subglabro, aequali, 15–25 × 0.8 mm. Annulo nullo. **Carne** inodora vel subinodora.

Sporis 6–7 × 4.3 × 4.8 μm e basidiis tetrasporis, 7.5 × 5.5 μm e basidiis bisporis, pariete pro ratione tenui (0.3–0.4, raro usque ad 0.5 μm crassa), levi, poro germinativo haud truncato vel subtruncato vel perangusto vel moderatim lato instructis, ellipsoideis vel ovoideis, episporio subatro et tenui (NH₄OH), endosporio subhyalino, NaOH ope brunneis sed supra hyphas pigmentatas laete cinnamomeo-ferrugineis in superpositione, inamyloideis. **Hymenio:** Basidiis 15–22 × 5.5–9 μm, bivulvatis tetrasporis. Cystidiis nullis. Cheilocystidiis ad et prope aciem lamellarum 22–30 × 6–8(–10) μm, utrifimbriatis vel subampullaceis, tenuitunicatis, hyalinis. Pseudoparaphysibus ad et prope aciem lamellarum 18.5–28 × 10–13 μm, sat numerosis. **Hyphis** fibulatis, haud gelatinosis. Tramete hymenophorali regulari. **Epicute pilei** cutiformi ex hyphis subfilamentosis, subtiliter flavido-incrustatis granularibus efformato. Hypodermio cutiformi, ex hyphis latis, ventricosis, cellulis breviter elongatis, pigmento ferrugineo incrustatis efformato.

Ad terram arenosam et humosam prope flumen gregatim.

TYPUS—Mexico, Xalapa, near Río Aserradero at Tlilapan, 24 VI 1969, *Singer M 8198* (F).

Phaeomarasmium malvacearum Sing. in Sing. & Digilio and *P. pascuus* Sing. are related.

CORTINARIACEAE Roze

Alnicola fusispora (Velen.) Sing., comb. nov.

BASIONYM—*Galera fusispora* Velen., *Opera Bot. Czech.* 4: 70. 1947.

Gymnopilus pachycystis Sing., spec. nov.

Pileo aureo-aurantio, subglabro, nudo, subnitido, levi, in siccis brunneo, convexo, obtuso, 35 mm lato. **Lamellis** aurantiaco-ferrugineis, siccando magis brunneis, sat latis, confertis, sinuato-adnatis vel sinuato-adnexis, lineis decurrentibus.

Stipite albo, subaurantio, in siccis brunneo, basin versus attenuato, 70 × 7 mm. Annulo nullo. **Carne** in siccis submiti.

Sporis 5.7–6.2 × 4–4.5 μm, ellipsoideis, plerumque depressione exigua suprahilari gaudentibus, inamyloideis, fortiter verruculoso-echinulatis, ornamentatione 0.2–0.5 μm alta, ferrugineo-brunnea supra episporium ochreum conspicua oblectis. **Hymenio:** Basidiis 20–21 × 6–6.5 μm, tetrasporis. Cystidiis sparsis ad latera et aciem lamellarum, 15–26 × 9–13.5 μm, ventricososubvesiculosos, plerumque fulvis interdum mucrone exiguo, acuto, apicali ornatis. Cheilocystidiis aut clavatis, interdum duobus appendicibus apicalibus digitiformibus ornatis, 22–25 × 8–8.5 μm, aut ventricosos vel ventricosos-ampullaceos, hyalinis vel pigmentatis, 20–29 × 8–10.5 μm aut utrifimbriatis, e. gr. 25 × 6 aut ampullaceis et minoribus, plerumque hyalinis, 14–16 × 5.5–6.5 μm.

Hyphis flavidis, fibulatis, inter septa frequenter latis (45–55 × 25–30 μm), haud gelatinosis. Tramete hymenophorali regulari. **Hyphis** oleiferis intense luteis, 3.5–4.5 μm latis. **Epicute pilei** tenui, cutiformi, ex hyphis laxis sed haud gelatinosis, filamentosis, 1.2–2.7 μm latis efformata. Hypodermio cutiformi, ex hyphis 3–10 μm latis, nonnullis brunneo-granuloso-incrustatis efformato. Tegumento stipitis ad extremum apicem eius tantum praesente et e nonnullis dermatocystidiis e. gr. 22 × 9 μm et ventricosis vel ventricososubampullaceis, hyalinis vel pigmentatis aut e. gr. 15 × 3 μm, inconspicuis, subfusoides, saepe curvatis, hyalinis efformato.

Ad truncos arborum delapsarum dicotyledonearum sub quercubus in quercetis tropicali-montanis.

TYPUS—Costa Rica, Alajuela, San Ramón, Cerro Tinaja, 1500 m alt., Augusto 1981, *Gómez 17916* (F).

Gymnopilus terraefirmae Araujo and *G. heterocheilus* Araujo, both at present not validly published, are related but evidently quite different.

Galerina majalis Sing., spec. nov.

Pileo ochraceo-brunneo, lenissime subviscido tempore humido, fortiter hygrophano, in maculis insularibus siccante, demum (margine postremo) omnino pallescente dehydratione, glabro, persistenter convexo, sed centro mox umbilicato, mar-

gine extremo demum recurvato, initio incurvo, per 1 mm a margine sulcolato pellucideque striato, 30–35 mm lato. **Lamellis** dilute cinnamomeo-brunneis, acie haud discolori, confertis, sat moderatim latis, adnatis. **Stipite** fuligineo-biso, apice brunneolo-hyalino, in vegetis innate pallide sericeo partim, sed in siccis subglabro, aequali sed basi incrassata vel subbulbosa, 31–33 × 3–3.5 mm, ad basin usque ad 6 mm diam. Velo annuliformi, annulo apicali vel mediano, vix conspicuo, subtiliter fibrilloso, pallidissime brunneolo, brunneolo-pallido. Mycelio basali albo. **Carne**, superficiebus subconcolori sed pallidiore, immutabili. Odore fungoide, haud farinoso.

Sporis 8.3–8.8 × 4.3–5 μm, ovoideis vel ellipsoideis, subtiliter sed manifeste verruculosus, zona levi suprahilari bene evoluta et limitata gaudentibus, perisporio manifesto sed raro separante, pseudoamyloideis. **Hymenio**: Basidiis tetrasporis. Cystidiis sparsis, 45–55 × 11–14.5 μm, ampullaceis, collo sat longo, 4–5 μm diam., apice plerumque leniter subcapitato (5.5–7 μm diam.) instructis, hyalinis vel flavis, ex toto tenuiparietalibus. Cheilocystidiis haud differentiatibus. **Hyphis** omnibus haud gelatinosis, haud incrustatis pigmento, flavidis, nonnullis flavido-hyalinis (KOH), fibulatis. Tramate hymenophorali flavido, regulari, multis hyphis inflatis. **Epicute pilei** tenui, cutiformi, haud gelatinosa, ex hyphis filamentosis efformata; dermatocystidiis praesentibus sed sat raris, e. gr. 36 × 3.5 μm, fusiformibus, obtusis, hyalinis, firme tunicatis.

Ad terram prope truncum quercinum in silva.

TYPUS—USA, Illinois, Cook County, Harms Woods, 26 V 1984, *Singer N 4121* (F).

This species is related to *G. marginata* (Fr.) Kühner and *G. physispora* Sing. The former, identical with *Galera conigena* Velen. (type, PR), differs from *G. majalis* in slightly larger spores, rarely subcapitate cystidia, rarely subbulbous stipe, farinaceous odor, habitat, and later fruiting. The latter differs in differentiated cheilocystidia, incrustated cystidia which are not entirely hyaline and not frequently subcapitate, the lighter color of the stipe and the lignicolous habitat. *Galerina unicolor* (Fr.) Sing. differs in shape and diameter of the pileus, has a different epicutis and slightly larger spores. *Galerina marginata* occurs in Michigan and Illinois, generally in late fall, and very often on trunks of *Acer* and *Fagus*; it is poisonous, containing amanitin.

Galerina oligocalyprata Sing., spec. nov.

Pileo ochraceo-brunneo, inter strias pallidiore, glabro, nudo, pellucide striato per tres quartas partes radii, campanulato-conico, saepe papillato 5 mm alto et 4.5–5 lato. **Lamellis** ferrugineo-ochraceis vel ferrugineo-brunneis, distantibus (10–13 lamellis percurrentibus), albo-marginatis, satis angustis vel mediocriter latis, primum ascendentibus, adnatis vel late adnatis. **Stipite** uniformiter colorato, nonnihil pileo pallidiore, albo-pruinoso in quarto superiore tantum, evelato, aequali, 21 × 0.8 mm. **Carne** tenui, inodora.

Sporis 8.5–11.5 × 5.5–7.5 μm, plerumque 9–10 × 5.5–6.7 μm, ellipsoideis, perpaucis frontaliter rotundato-rhombicis vel ovatis, plerumque manifeste zona levi limitata suprahilari instructis, subtiliter asperulatis vel levissimis in circumferentia, ornamentatione ferruginea supra superficiem episporialem levem vel longitudinaliter subrugosam punctiformi, vix projiciente sed manifesta instructis, pariete crassa (1–1.5 μm) pseudoamyloidea gaudentibus, paucioribus quam 50% bi- vel uni-auriculariter uni- vel bi-calypratis e perisporio. **Hymenio**: Basidiis 22–24 × 8–9.5 μm, (bi-) vel tetrasporis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham lamellarum 22–37 × 5.5–6.5 μm (quadruplo vel sexies longioribus diametro), basin versus frequenter ventricosis, superne longe effilatis et 1.5–3.5 μm diam., ad apicem ipsum aequalibus, claviculatis vel subcapitatis, et si in apice dilatata sunt, ibi 2.8–5.5 μm diam., omnibus tenuitunicatis et hyalinis. **Hyphis** tramatis pilei et hymenophori regularis pallide flavidis, haud gelatinosis, fibulatis. **Epicute pilei** intermittente, cutiformi, tenui, haud gelatinosa. Hypodermio cutiformi, ex hyphis 4–10 μm latis, pigmento ferrugineo incrustatis efformato. Tegumento stipitis ad apicem stipitis e dermatocystidiis cheilocystidiis simillimis efformato.

Inter muscos et Hepaticas in quercetis tropicali-montanis solitario.

TYPUS—Colombia, Boyacá, Acabuco, 28 VII 1960, *Singer B 3571* (F).

This species is close to *G. subcerina* Smith & Sing. and *G. austrocalyprata* Smith & Sing. It differs from the former especially in narrower cheilocystidia and lamellae, and the habitat; it differs from *G. austrocalyprata* in hyaline cheilocystidia, broader spores and habitat (not growing on wood). It is different from both in being strictly tropical

as well as in the presence of but few calyptrate spores. A collection from Costa Rica, Alajuéla, Volcán Poás, 25 VII 1986, *Singer B 14522*, F, differs very slightly in less distinctly punctate and somewhat smaller ($8.5\text{--}10 \times 5\text{--}6 \mu\text{m}$) spores and cheilocystidia ($22\text{--}30 \times 4.5\text{--}6 \mu\text{m}$). It is certainly conspecific with *G. oligocalyptata*.

Galerina sequoiae Sing., spec. nov.

Pileo ochraceo-brunneo (colore *G. hypnorum* approximante 5 D 5 vel 5 D 7, aut 6 D 8 vel 7 E 7 Mu), hygrophano, centro vel in sulcis frequenter pallidiore, e. gr. alutaceo-pallido, glabro, longe striato-sulcato, haud viscido, campanulato, obtuso vel subumbonato, 3–5 mm alto et lato. **Lamellis** ochraceo-brunneis, acie pallidis, latis, subdistantibus vel distantibus, plerumque ventricosis, adnexis. **Stipite** dilute ochraceo-brunneo et ad apicem plerumque pallide stramineo, aequali vel basin versus subattenuato, glabro sed ad apicem subtiliter pruinoso, evelato, $10\text{--}21 \times 0.6\text{--}1$ mm. Velo subnullo in maturis, in juvenilibus albo, tenui, fragmentato, inconspicuo sub lente visibili. **Carne** tenui, brunneolo-pallida vel alutaceo-pallida, immutabili, inodora.

Sporis $8\text{--}11 \times 4.5\text{--}6 \mu\text{m}$, plerumque $9\text{--}10.5 \times \pm 5.5 \mu\text{m}$, sporis paucis majoribus (usque ad $12 \times 5.5 \mu\text{m}$) interdum praesentibus, ellipsoideo-subamygdaliformibus vel fusoides, rarius ellipsoideis, $Q = \pm 2$ vel 1.7, in sporis maximis 2.4, ornamentatione admodum subtili punctulatis aut saepe subnulla gaudentibus, sed 25%–80% auriformiter e perisporio calyptatis, zona levi bene limitata suprahilari plerumque visibili, callo, raro poro munitis, brunneo-ferrugineis in KOH (juvenilibus flavidis). **Hymenio:** Basidiis $18.5\text{--}22 \times 6.3\text{--}8.5 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis $27.5\text{--}40 \times 2.5\text{--}7 \mu\text{m}$, anguste utriforibus vel subampullaceis vel subulatis vel filiformibus, raro subcapitatis vel claviculatis, in acie lamellarum heteromorpha saepe paucis cheilocystidiis alii typi (clavato-ventricosis, brevioribus, e. gr. $13 \times 6 \mu\text{m}$) interspersis, omnibus hyalinis, tenuitunicatis. **Hyphis** fibulatis, haud gelatinosis, in tramate hymenophorali regulari hyalinis. **Epicutis pilei** cutiformi, haud gelatinosa, ex hyphis horizontalibus, paucis, plerumque filamentosis, horizontalibus, levibus efformata. Hypodermio cutiformi, pigmentato, ex hyphis latioribus efformato, pigmento incrustante, ochraceo-brunneo vel ferrugineo-brunneo. Tegumento apicis stipitis e dermatocystidiis numerosis cheilocystidiis sim-

limis efformato; infra zonam apicalem dermatocystidiis nullis.

Ad truncos Sequoiae in silva, hiemalis, gregaria.

TYPUS—USA, California, Samuel Taylor Park, 6 II 1982, leg. *Mackler, Singer, & Vergeer*, *Singer N 5005* (F). Additional collection: same locality, January 1983, *Singer N 5110* (F); same locality, January 1984, *Mackler & Vergeer* (F).

This species belongs in sect. *Calyptospora*. *Galerina fallax* Smith & Sing. is related but differs in shorter spores, larger carpophores, more strongly pigmented stipe, somewhat broader cheilocystidia, yellow incrustated hyphae in the hymenophoral trama, host, and geographic area. The preceding species, *G. oligocalyptata* Sing., belonging in the same section as *G. sequoiae*, has similar habit and colors when seen macroscopically, but habitat and pigmentation are different. *Galerina cerina* var. *longicystis* Smith & Sing. with likewise less consistently calyptrate spores differs in cystidial characters and habitat. *Galerina sahleri* var. *sequoiae* Smith & Sing. has the same habitat as *G. sequoiae*, but differs in larger spores, darker center of the pileus, incrustated tramal hyphae, larger cheilocystidia, and dark reddish brown base of stipe.

Galerina tatrensis Sing., spec. nov.

Pileo ochraceo-brunneo, inter strias ochraceo-brunneas pallidiore, glabro, pecculide striato et sulcato, campanulato, obtuso, haud viscoso, 7–7.5 mm alto et lato. **Lamellis** brunneolo-ochraceis, mediocriter latis, distantibus, rotundato-adnatis. **Stipite** melleo-brunneolo, glabro et nudo, sed apice (per tertiam vel quartam partem stipitis) pruinoso, aequali, subflexuoso, $\pm 40 \times 1$ mm. Velo nullo. **Carne** subinodora.

Sporis $13\text{--}14.5\text{--}(17) \times 6.5\text{--}8\text{--}(9) \mu\text{m}$, amygdaliformibus, apice saepe mucronatis rostratis, moderatim bene pigmentatis, brunneolo-ochraceis, inamyloideis, ornamentatione verruculoso-punctata manifesta sed vix obscuriore gaudentibus et ex ea circumferentia leniter asperula, perisporio inconspicuo, applicato obtectis, zona levi suprahilari bene limitata instructis. **Hymenio:** Basidiis $18\text{--}28 \times 7\text{--}7.5 \mu\text{m}$ bisporis, paucis monosporis. Cystidiis ad aciem lamellarum numerosissimis, ad latera numerosis, $42\text{--}78 \times 12\text{--}19 \mu\text{m}$, ampullaceis, apice $20\text{--}30 \times 4\text{--}5.5 \mu\text{m}$, cylindrico vel attenuato, obtuso, raro leniter subcapitato (usque ad $5.5 \mu\text{m}$ diam.), ex toto tenuitunicatis, ad apicem raro

ochraceis, ceterum hyalinis. Cheilocystidiis haud differentiatis. **Hyphis** fibulatis. Tramate hymenophorali regulari, ochraceo, pigmento certis in locis incrustante, ochraceo. **Epicute pilei** hyalina, haud gelatinosa, tenui, cutiformi, ex hyphis filiformibus vel moderatim tenuibus, nonnullis ex eis lenissime incrustatis efformata. Hypodermio cutiformi, ex elementis latioribus, obscurioribus e pigmento incrustante magis abundante efformato. Dermatocystidiis ad marginem extremum pilei visis et cystidiis hymenialibus identicis. His etiam ad apicem stipitis praesentibus.

Ad ramulos et radices putridas *Pini mugo* Turra in zona alpina inferiore inter *Polytricha*.

TYPUS—Slovakia (ČSSR), Skalnaté Pleso, 1930 m alt., 5 IX 1974, *Singer C 5881* (F).

This species belongs in sect. *Galerina*, stirps *Minima*, since it has a stipe which is pruinose only at the apex. It is evidently close to *Galerina longinqua* Smith & Sing., but differs in less bright colors and somewhat larger spores, also in not at all gelatinous cutis, in incrusting pigment of the hypodermium and the lignicolous habitat. In addition, the carpophores are somewhat more slender than in *G. longinqua*.

CREPIDOTACEAE (Imai) Sing.

Melanomphalia leucocephala Sing., spec. nov.

Pileo albo, sicco, levi, macroscopice glabro, sub lente appresse sericeo, convexo, 5.5 mm lato. **Lamellis** ochraceo-luteis, haud venosis sed perangustis, subconfertis, paucis lamellulis intermixtis, arcuatis, subdecurrentibus. **Stipite** albo, glabro, sicco, solido(?), aequali, 8.5 × 2.5 mm. Velo nullo. Mycelio basali sparso. **Carne** alba, partim flavido-ochrea, succosa, immutabili, inodora.

Sporis 5–7 × 3.3–5 μm, ellipsoideis vel breviter ellipsoideis, paucis subglobosis, subtiliter marmoratis, sublevibus, pariete 0.2–0.4 μm crassa subheterogenea instructis, brunneolo-ochraceis vel cinnamomeo-ochraceis (NH₄OH), inamyloideis. **Hymenio**: Basidiis 12.5–22 × 5.3–7.2 μm, 2–3–4-sporis, plerumque tetrasporis, frequenter una cum spora voluminosa et tribus parvis. Cystidiis nullis; cystidiolis basidiomorphis sparsis(?). Cheilocystidiis ad aciem lamellarum basidiis interspersis, cystidioliformibus, basidiomorphis, sed interdum irregularibus, et tunc cylindraceis vel ventricosis,

hyalinis, 9.5–25 × 3–7.5 μm, interdum corpusculo interno hyalino praeditis. **Hyphis** plerumque filamentosis, nonnullis inflatis usque ad 15 μm diam., fibulatis, haud gelatinosis, inamyloideis. Tramate hymenophorali regulari, subhyalino (NH₄OH). **Epicute pilei** cutiformi, haud gelatinosa, ex hyphis filamentosis plerumque radiatim dispositis, 1–2.5 μm diam., tenuitunicatis, haud gelatinosis, in fasciculis densis aggregatis atque dissociatis efformata. Dermatocystidiis raris, sparsis, versiformibus, 7.5–13 × 5.7 μm, saepe cylindraceis, ventricosis, clavatis, utrififormibus. Hypodermio epicute simili sed hyphis latioribus.

Ad truncum putrescentem quercinum in Querceto tropicali-montana solitario.

TYPUS—Costa Rica, Cartago, San Gerardo, 3000 m alt., 3 VIII 1981, *Singer B 12656* (F).

Simocybe albovelutina Sing., spec. nov.

Pileo albo, dense velutino-pubescente, dein strato velutino fracto et floccoso, inter flocculos brunnescente, levi, demum haud manifeste striato, convexo, obtuso, 1.5–2.5 mm lato. **Lamellis** dilute brunneis, acie albis, mediocriter latis, mediocriter distantibus, adnexas. **Stipite** albo, dense albo-fibrilloso, aequali vel leniter apicem versus attenuato, obliquo vel erecto, 0.4–0.8 × 0.2–0.3 mm. Velo in adultis nullo, sed in juvenilibus fibrillis stipitis cum pubescentia marginis pilei continuis. Mycelio basali albo.

Sporis 6–6.5(–7) × 4–4.5(–5) μm, ellipsoideis, ad latus interius convexis, rarius applanatis, rarissime subdepressis, lateraliter visis ellipticis vel cuneiformibus, apicaliter haud mucronatis nec poro germinativo instructis, ochraceo-brunneis, levibus, inamyloideis. **Hymenio**: Basidiis 12–13 × 6–6.5 μm, tetrasporis, primum clavatis, dein late clavatis. Cystidiis nullis, sed nonnullis basidiolis sterilibus et demum cystidioliformibus, late clavatis vel breviter clavato-subventricosis. Cheilocystidiis 25–30 × 3.8–7 μm, cylindraceis sed plerumque leniter constrictis sub clavicula apicali 4–5 μm diam., saepe ad basin iterum leniter incrassatis, constrictione 2–4 μm diam., omnibus hyalinis, haud incrustatis, tenuitunicatis, ad aciem lamellarum fasciculatis. **Hyphis** hyalinis, haud gelatinosis, fibulatis. **Epicute pilei** primum subhymeniformi, e dermatocystidiis et pilis filamentosis densis erectis efformata, sed dein disrupta, fasciculis e paucioribus dermatocystidiis et numerosioribus pilis efformatis; inter pilos et dermato-

cystidia nonnullis catenulis cellularum erectis praesentibus, cellulis e. gr. $10 \times 7.5 \mu\text{m}$ et vesiculosis. Dermatocystidiis cheilocystidiis similibus vel ampullaceis, hyalinis; pilis frequenter longioribus, filamentosis, interdum ad basin incrassatis, pariete tenui, hyalina, sed granulis hyalinis incrustatis, $1.8\text{--}4 \mu\text{m}$ diam. Tegumento stipitis epicuti pilei simili.

Ad lignum gregatim.

TYPUS—Venezuela, Monagas, Caripe, near Cueva del Guácharo, 18 VII 1972, leg. *Dumont, Cain, Samuels & Morillo, Dumont VE 5310* (NY).

This species is somewhat related to *S. amazonica* Sing. but differs in smaller carpophores and granular-incrusted hairs.

Simocybe alneti Sing., spec. nov.

Pileo griseo-brunneo ("adobe" M&P), macroscopice glabro, in siccis dilute brunneolo et leniter sulcolato, in vegetis pellucide striato, in centro leniter ruguloso siccando sed levi in vegetis, circumferentia ovali (latitudine brevior), $4\text{--}4.5 \text{ mm}$ lato. Lamellis griseis, latis, acie pallidis et dilute brunneis in siccis lateribus, subdistantibus (\pm decem lamellis percurrentibus), adnexis vel sinuato-adnexis. Stipite dilute brunneolo, sed albo-pruinoso, curvato, fortiter excentrico, $1\text{--}1.5 \times 0.2\text{--}0.3 \text{ mm}$. Velo nullo. Mycelio basali albo. Carne tenui, inodora.

Sporis $5\text{--}7.5 \times 4\text{--}5 \mu\text{m}$, ellipsoideis, lateraliter ad latus interius convexis, raro lenissime phaseoliformibus, ochreobrunneis vel alutaceis, poro germinativo et callo nullis, depressione suprahilari et applanatione nullis, pariete homogenea et levi, firma instructis, inamyloideis. Hymenio: Basidiis $15\text{--}18 \times 6.5\text{--}7 \mu\text{m}$. Cystidiis nullis. Cheilocystidiis $12\text{--}40 \times 5\text{--}8.5 \mu\text{m}$, utrififormibus vel sublecythiformibus, rarius ampullaceis, capitulo vel clavicula $4.5\text{--}6.5 \mu\text{m}$ diam., collo brevi vel longo $1\text{--}3 \mu\text{m}$ diam., apice ampullaceorum frequenter flexuoso, haud acuto, tenuitunicatis, hyalinis vel dilute melleo-flavis. Hyphis haud gelatinosis, fibulatis. Tramate hymenophorali regulari. Epicute pilei non hymeniformi sed e fasciulis numerosis dermatocystidiorum efformata, his aut cheilocystidiis simillimis aut ventricosis aut filamentoso-capitatis (sphaerocystibus nullis), saepe firme tunicatis. Hypodermio cutiformi, brunneolo, pigmento haud incrustante. Tegumento stipitis e dermatocystidiis eis pilei similibus efformato.

Ad lignum (probabiliter *Alni jorullensis* H. B. & K.) in alneto tropicali-montana gregatim.

TYPUS—Argentina, Jujuy, Lagunas de Yala, 2100 m alt., 10 II 1966, *Singer T 5024* (F).

Simocybe coniferarum Sing., spec. nov.

Pileo olivaceo ($15 \text{ L } 8 \text{ M\&P}$), centro subatro ("bronze lustre" M&P), subtiliter pallide pruinoso sub lente, hygrophano, levi nec pellucide striato, convexo, \pm umbilicato, usque ad 17 mm lato. Lamellis griseis ("pelt" M&P), confertis, mediocriter latis, rotundato-subliferis. Stipite griseolo dein brunneolo, ex toto subtiliter albo-pruinoso, cavo, leniter apicem versus attenuato, haud bulboso, $58 \times 3.5 \text{ mm}$. Velo nullo. Carne superficiebus concoloribus, molli-carnosa, inodora.

Sporis $6.5\text{--}7.5 \times 4.2\text{--}4.5 \mu\text{m}$, ellipticis vel ovatis frontaliter visis sed phaseoliformibus lateraliter, levibus, poro germinativo nullo, ochraceomelleis (NH_4OH). Hymenio: Basidiis $26 \times 7\text{--}7.8 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis $36\text{--}48 \times 5.5\text{--}7.7 \mu\text{m}$, cylindraceutis vel anguste ventricosis vel clavatis, hyalinis, nonnullis intus melleis, obtusis. Hyphis $3.5\text{--}7 \mu\text{m}$ latis, nonnullis usque ad $25 \mu\text{m}$ inflatis, fibulatis, haud gelatinosis. Tramate hymenophorali regulari. Epicute pilei e dermatocystidiis singularibus vel fasciculatis sed haud continue hymeniformiter dispositis efformata, his $25\text{--}30 \times 7\text{--}14.5 \mu\text{m}$, versiformibus, late ampullaceis vel utrififormibus, interdum clavatis, hyalinis vel melleis, nonnullis in hypodermio natis majoribus et incrustatis. Hypodermio subcutiformi, ex elementis hyphalibus $3.3\text{--}12 \mu\text{m}$ latis, nonnullis usque ad $23 \mu\text{m}$ inflatis, pigmento brunneolo-incrustatis efformato. Pruina stipitis e dermatocystidiis versiformibus efformata.

Ad lignum putridum coniferarum (Piceae?) in Piceeto.

TYPUS—Switzerland, Vaud, Bois d'Apples, Les Tailles Fontaine aux Chasseurs, 662 m alt., 5 VIII 1970, *Singer C 5040* (F).

This species reminds one of *S. obscura* (Romagnesi) Reid but it differs in gray lamellae, broader spores, and habitat. What may be an American oak-inhabiting race is described below.

Var. *quercuum* Sing., var. nov.

A varietate coniferarum differt carpophoris minoribus, cheilocystidiis brevioribus, ampullaceis

vel utriforbibus, dermatocystidiis nonnullis longioribus et cellulis subisodiametricis frequentius interspersis. Ad quercinum lignum putridum in silva mixta.

TYPUS—USA, Illinois, White Pine State Park, 1 IX 1975, *Singer N 7541* (F).

Simocybe panamensis Sing., spec. nov.

Pileo 2–8 mm lato, **lamellis** subferrugineis, adnexus, cheilocystidiis ampullaceis vel ventricosomucronatis praecipue a *S. reductoaffini* Sing. aequatoriana differt.

Ad frustula lignea, fructus et folia in silva tropicali-montana.

TYPUS—Panamá, Veraguas, 16 km from Santa Fé, 18 VI 1975, *Dumont PA 560* (NY).

Crepidotus igapoensis Sing., spec. nov.

Pileo pallide brunneolo, hygrophano, dehydratione pallidior vel pallido, estriato vel brevissime pellucide striato, in siccis subpallido et brunneolovirgato ad marginem, pallide brunneolo a tergo, glabro, haud viscido, convexo, dimidiato, 9 mm lato. **Lamellis** brunneolis, deorsum concurrentibus, mediocriter latis, confertis, attingentibus. **Stipite** minutissimo, albo, glabro, sublaterali, 0.5 × 0.2 mm. Mycelio basali albo. **Carne** alba, immutabili, tenui.

Sporis 5.3–7 × 5–6.7 μm, globosis, in episporio melleo aculeis brunneo-melleis subtiliter punctatis (sub immersione ornamentationem typi XI monstrantibus), depressione et applanatione suprahilaribus destitutis. **Hymenio**: Basidiis 24.5–26.8 × 8–9.3 μm, tetrasporis, hyalinis, paucis pallide brunneolis, basi defibulatis. Cystidiis nullis. Cheilocystidiis ad aciem heteromorpham lamellarum 20–30 × 8.5–12 μm, clavatis, hyalinis, perpaucis pallidissime brunneolis. **Hyphis** strata gelatinosa haud formantibus, elongatis vel filamentosis, tenuitunicatis, radiatim in pileo dispositis, defibulatis. Tramate hymenophorali regulari, hyalino. **Hyphis oleiferis** 2.7–6.7 μm diam. **Epicute pilei** hyphosa, a tramate pilei paullum differente sed hyphis hic nonnihil angustioribus, 2–6.7 μm diam., omnibus levibus, hyalinis; dermatocystidiis ad marginem pilei numerosis, basin pilei versus sparsis, his 20–54 × 5–9.5 μm, plerumque strictis,

erectis, paucis repentibus vel ascendentibus, clavatis, hyalinis, tenuitunicatis.

Ad frustula lignea ex arbore dicotyledonea delapsa in silva tropicali typi igapó, solitario.

TYPUS—Brazil, Amazonas, Igarapé do Tarumãzinho, 12 III 1980, *Singer B 12019* (INPA).

By its characters *C. igapoensis* comes close to *C. parvulus* Murr. as described by Hesler and Smith, who have studied the type. Our Amazonian species differs, however, in not pure white pileus, glabrous surface, larger spores, and closer lamellae. The key in Hesler and Smith (1965) leads to *C. putrigenus* (Berk. & Curt.) Sacc., but the type of that species is larger and the hyphae have clamp connections. Hesler and Smith's statement to the contrary is in error.

Crepidotus pilosiceps Sing., spec. nov.

Pileo albo, sericeo-piloso, dein partim laxe lanoso-gossypino, levi, sicco, haud hygrophano, primum globoso, mox semigloboso, dein convexo, obtuso, haud umbilicato, usque ad 3 mm lato. **Lamellis** albis, distantibus, satis angustis, ad aciem plerumque fimbriatis, attenuato-attingentibus. **Stipite** primum pilei diametro longiore, centrali, in maturis pilei diametro brevior vel brevissimo, excentrico, demum sublaterali, pilei superficie inferiori applicato, albo, ± pubescente, demum glabrescente frequenter curvato praesertim in maturis, aequali vel dein basin versus attenuato, 2–4 × 1.2–1.5 mm. Mycelio basali albo. **Carne** alba, immutabili, tenui, inodora.

Sporis 7.5–9.5(–10.3) × 4.2–5.5(–6) μm, ellipsoideis vel ovoideis, punctatis, pariete heterogenea, unicolori ochraceo-brunneola instructis, at nonnullis sublevibus, inamyloideis. **Hymenio**: Basidiis 19–27 × 8–10.7 μm, 2–3–4-sporis, plerumque tetrasporis. Cystidiis nullis. Cheilocystidiis admodum versiformibus, 24–58 × 4.5–6.5 μm ad aciem heteromorpham, frequenter ampullaceis, vel subulatis, vel utriforbibus, haud acutis sed frequenter ad apicem nodulosis vel lobatis, vel furcatis vel capitatis et saepe geniculatis, omnibus tenuitunicatis et hyalinis. **Hyphis** haud gelatinosis, fibulatis. **Epicute pilei** e fasciculis hypharum ascendentium efformata, cellulis terminalibus hyphosis (e. gr. 120 × 3 μm) aut cystidioideis, his dermatocystidiis cheilocystidiis simillimis sed frequenter nonnihil minoribus vel majoribus et appendiculo vel appendiculis latis, brevibus, obtusis,

rarius exiguis obsitis, praesertim ad apicem, saepe flexuosis. Dermatocystidiis stipitis $20\text{--}37 \times 5\text{--}9.8 \mu\text{m}$, versiformibus, frequenter subulatis vel utriformibus vel ampullaceis (collo $3\text{--}4.5 \mu\text{m}$ diam., obtuso), rarius excrescentiis obtusis instructis, omnibus tenuitunicatis et hyalinis.

Ad truncum emortuum dicotyledoneum in silva tropicali typi terrae firmae, dense gregatim.

TYPUS—Brazil, Amazonas, 30 km N of Manaus, 18 I 1978, *Singer B 10556* (INPA).

The small size of the carpophores, from the beginning distinct and at first central stipe, and the silky-hairy covering of the pileus separate this Amazonian species from other species of stirps *Fusisporus* (sect. *Echinospori*).

ENTOLOMATACEAE Kotlaba & Pouzar

Rhodocybe angustispora Sing., spec. nov.

Pileo griseo, margine albido, interdum ochreobrunneo, glabro, levi vel subtiliter radiatim striolato ad marginem, neque hygrophano neque viscido, convexo, demum circum papillam persistentem applanato, 12 mm lato. **Lamellis** albis, dein albidis, horizontalibus, confertis, angustis, liberis vel subliberis. **Stipite** albido, haud viscido, macroscopice glabro, sub lente subtiliter pubescente, praesertim ad apicem, aequali, 20×1 mm. **Carne** alba, immutabili, inodora vel subinodora.

Sporis $5.5\text{--}7.2 \times 2.5\text{--}3.7 \mu\text{m}$, amygdaliformibus, sublevibus vel leniter gibbosis, a polis visis angularibus, hyalinis in KOH, inamyloideis, pariete continue cyanophila instructis. **Hymenio**: Basidiis $12\text{--}19 \times 4\text{--}5 \mu\text{m}$, tetrasporis, intus granulosis in medio "cotton blue," compluribus ad basin fibulatis. Cystidiis ad latera lamellarum exiguis, inconspicuis, praesentibus. Pseudocystidiis ad et prope aciem lamellarum aut lanecolatis vel subulatis et e. gr. $14 \times 2 \mu\text{m}$ aut $15\text{--}50 \times 4.5\text{--}8(25) \mu\text{m}$, majoribus fusoides vel clavatis vel clavato-mucronatis, corpusculis exiguis cyanophilis guttatis vel amorphis impletis. **Hyphis** non gelatinosis, inamyloideis, filamentosis, parallelis vel subparallelis, melleo-hyalinis in KOH, nonnullis fibulatis, multis defibulatis, $1.5\text{--}4.5(5) \mu\text{m}$ diam. Tramate hymenophorali regulari, ex hyphis subparallelis efformato. **Epicute pilei** cutiformi. Dermatocystidiis stipitis $15\text{--}35 \times 3\text{--}4.5 \mu\text{m}$, versi-

formibus, ampullaceis vel clavatis, angustis, tenuitunicatis, hyalinis. Dermatopseudocystidiis in stipite e. gr. $30 \times 10 \mu\text{m}$, etiam versiformibus, contentu aureo-melleo gaudentibus, rarioribus. In pileo dermatocystidiis dermatopseudocystidiisque nullis vel raris.

Ad humum lignosum in querceto (*Quercus oleoides* Schlecht. & Cham.) planitieis tropicali solitario.

TYPUS—Costa Rica, Guanacaste, Parque Nacional de Santa Rosa, 25 VII 1981, *Singer B 12470-12478* (F).

This species seems to be close to *Lyophyllum* because of the siderophilous granularity of the basidia but the presence of pseudocystidia and dermatopseudocystidia and the spores which are angular when seen in polar view, as well as the large number of clampless septa indicate affinity with *Rhodocybe*. The narrower spores differentiate it from the species of sect. *Rhodocybe*, and the non-hygrophanous pileus distinguishes it from the species entering the stirps of *R. nitellina* (Fr.) Sing.

Rhodocybe conica Sing., spec. nov.

Pileo fuligineo, macroscopice glabro, haud viscoso, nudo, margine primum incurvo, levi vel sublevi, conico, acuto, subpapillato, 20 mm lato, 11 mm alto. **Lamellis** pallide griseis, dein sordidis, sub lente in siccis guttulis resinaceis succineis vel castaneis apparentibus, angustissimis, confertissimis, ascendentibus, \pm late adnexas. **Stipite** fuligineo, glabro, levi, haud viscido, aequali, 17×1.2 mm. **Carne** superficiebus pallidiore, immutabili, tenui, inodora.

Sporis $5\text{--}7 \times 2.8\text{--}4.4 \mu\text{m}$, versiformibus, plerumque ellipsoideis, multis asperulis, nonnullis cristis discontinuis et spinulis instructis, praesertim e polis visis haud teretis, hyalinis vel subhyalinis, inamyloideis. **Hymenio**: Basidiis $16\text{--}20 \times 5.5\text{--}6.2 \mu\text{m}$, tetrasporis. Cystidiis nullis. Cheilocystidiis longissimis, filamentosis, $1\text{--}5 \mu\text{m}$ diam., hyalinis, tenuitunicatis sed massis resinaceis succineis vel castaneis incrustatis in speciminibus exsiccatis. **Hyphis** defibulatis, haud gelatinosis, inamyloideis. Tramate hymenophorali regulari, ex hyphis subhyalinis vel lenissime pigmentatis, elongatis, subparallelis efformato. **Epicute pilei** cutiformi ex hyphis atrocastaneis (pigmento intraparietali et incrustante) parallelis et subintertextis efformata e quibus pila longa filiformia (usque ad

125 × 1.7–2.5 μm), hyalina, tenuitunicata, obtusa, interdum furcata emergunt, his pilis cheilocystidiis similibus. Hypodermio multis in locis magis intertexto et subtrichodermiali, ex hyphis 2–5 μm latis et eodem ut epicutis pigmento atrocastaneo.

Ad humum, folia putrescentia, frustula lignea in silva arenosa tropicali typi campinarana solitario.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 125, 21 V 1978, *Singer B 11049* (INPA).

The combination of fuliginous color and conical-acute shape of the pileus distinguish this species from other species of sect. *Decurrentes*.

Rhodocybe hawaiiensis Sing., spec. nov.

Pileo castaneo, umbilico griseolo-cinnamomeo vel subsepiaceo, margine ochreo-cinnamomeo, glabro, fortiter hygrophano, rugoso-sulcato in majoribus, convexo, dein centro depresso vel applanato et frequenter umbilicato, demum ex integro applanato vel concavo, 15–28 mm lato. **Lamellis** sordide pallidis, mox cinnamomeo-ochreis, confertis vel subconfertis, haud arcuatis sed subhorizontalibus, sat latis ut minime in tertia parte interiore (stipitem versus), late adnatis vel adnato-subdecurrentibus vel dente decurrentibus. **Stipite** pileo subconcolori vel sordide fusco, macroscopice subglabro, sed ad apicem leniter pruinato, cavo, aequali vel apicem versus attenuato, 18–19 × 1–3 mm. Mycelio basali albo. **Carne** inodora.

Sporis 5.4–7.5 × 3.7–5 μm, ellipsoideo-subangularibus, leniter asperulato-nodulosis, a polis visis angularibus, appendiculo hilari fortiter excentrico instructis, sordide pallidissimeque carneis vel subhyalinis, inamyloideis. **Hymenio**: Basidiis 19.5–26 × 6–6.5 μm, tetrasporis. Pseudocystidiis ad aciem lamellarum nec non ad latera praesentibus, ad aciem numerosis, 28–45 × 4.7–6(–7) μm, intus contentu brunneolo (KOH) rarius hyalino impletis, fusoideis vel ventricosis, frequenter apicaliter anguste subacute vel obtuse apiculatis, laete castaneo-ferrugineis iodiuope, haud incrustatis. **Hyphis** defibulatis, haud gelatinosis neque incrustatis, 2–16 μm latis. Tramate hymenophorali regulari. **Epicute pilei** ex hyphis 2–6 μm latis tenuiter vel firme (usque ad 0.4 μm) tunicatis efformata, cutiformi.

Ad humum in silva.

TYPUS—Hawaii, Kauai, Hanapepe Canyon Outlook, 4500 ft alt., 24 I 1981, *Singer H 1* (F).

This species belongs in sect. *Rhodocybe*. It differs from *R. mordax* (Atk.) Baroni in shorter basidia, smaller stipe, and somewhat shorter spores, and from *R. lactariiformis* Sing. and *R. galerinoides* Sing. in the absence of a papilla. *Rhodocybe australis* Sing. has dark incrustated hyphae.

BOLETACEAE Chevalier

Gyrodon adisianus Sing., spec. nov.

Pileo dilute gilvo-luteo vel olivaceo-luteo vel stramineo, demum brunneo-maculato, maculis saepe aquosis, glabro macroscopice sed sub lente subtiliter brunneo-pustulato vel brunneo-flocculoso, demum glabrescente, sicco, sed in maturis viscidulo, levi, margine acuto, convexo, mox centro depresso aut supra stipitem depresso, frequenter demum applanato, 43–74 mm lato. **Hymenophoro** boletinoideo-submerulioideo, tubulis sat brevibus, plerumque seriatim radialiter dispositis, “lamellis” radialibus strictis vel flexuosis, undulosis, fortiter anastomosantibus in planitie aequali et profundiore et interdum nonnullis furcatis, ita ut “pori” inaequales et compositi evadant, omnino unicoloribus, sordide olivaceo-flavis, caerulescentibus fractu. Sporarum massa brunneo-olivacea. **Stipite** apicem versus flavo vel fulvo-flavido, atrobrunneo versus basin, subglabro (partim minute pustulato ita ut pileus), haud squamoso, solido, centrali vel excentrico vel laterali, frequenter curvato, sed etiam stricto, aequali, sed ad apicem plerumque leniter incrassato, in aliis basin versus gradatim attenuato, 25–58 × 4.5–13.5 mm. Velo nullo. Mycelio basali brunneo. **Carne** pilei flavido-alba et caerulescente fractu, molli in pileo et parte superiore stipitis, carne stipitis brunnea vel atrobrunnea, dura in parte inferiore stipitis; sapore et odore debilibus, vix acidulis.

Superficie pilei NH₄OH et NH₃ ope chalybaea, dein griseolo-viridi. Carpophoris Agaricalium albis contactu carpophororum huius fungi virescentibus.

Sporis (6.5–)7.5–9.5 × (4.3–)4.5–5 μm (Q = 1.5–1.9, plerumque 1.6–1.8), ellipsoideis, numquam subglobosis, nonnullis ex eis subphaseoliformibus lateraliter visis, levibus (sub immersione), subcrassiucule tunicatis, melleo-brunneis. **Hymenio**: Basidiis 23.5–30 × 8–9.5 μm, clavatis, fibula bas-

ali instructis, tetrasporis. Cystidiis sparsis vel raris, $15-23 \times 3.5-4 \mu\text{m}$, clavatis vel cylindratis, hyalinis. Cheilocystidiis sat numerosis inter basidia, $13.5-19 \times 5-5.8 \mu\text{m}$, versiformibus, frequenter clavatis vel ventricosis, interdum furcatis, obtusis, plerumque hyalinis. **Hyphis** inamyloideis, fibulatis, in tramate pilei lenissime subgelatinosis, pigmento plerumque intraparietali, interdum leniter incrustante. Hymenophori tramate laterali typi Boleti. **Hyphis** oleiferis $3-8 \mu\text{m}$ latis, pallide melles vel brunneis, frequenter, nonnullis anastomosantibus et furcatis. **Epicute pilei** in strato intermittente trichodermiali (flocculorum), brunnea, pigmento intraparietali et nonnihil incrustante, ex hyphis $1-3 \mu\text{m}$ latis efformata. Hypodermio continuo, partim subgelatinoso in maturis. Dermato-cystidiis cystidiis vel cheilocystidiis simillimis praesentibus.

Ad terram et ad lignum emortuum arborum dicotyledonearum in silva inundabili typi várzea gregatim.

TYPUS—Brazil, Amazonas, Ilha Marchantaria, Lago Central, 18 III 1983, leg. *Singer, Araujo Aguiar & Adis*, *Singer B 12434* (F).

An analysis of the flora and the roots in the vicinity of the area where the carpophores of *G. adisianus* were collected indicated the absence of ectotrophic and ectendotrophic mycorrhiza in the primary várzea and shows that this species is strictly saprophytic (see also Singer, 1984).

Phylloporus gymnocystis Sing., spec. nov.

Pileo viridi, in siccis umbrino vel sepiaceo. Hymenophoro stipitem versus sublamelloso, ceterum e poris radiatim elongatis seriatis efformato, sordide roseolo, lento nigrescente. **Stipite** fuligineo, subtiliter tomentoso, levi, tenui. **Sporis** $10.5-13.8 \times 4-6 \mu\text{m}$, inamyloideis, in massa sordide roseis (“wood rose” M&P). **Hymenio**: Basidiis (2-3-4)-sporis. Cystidiis $35-50 \times 10-12.5 \mu\text{m}$, pariete tenui, hyalina, pigmento intracellulari rubro-brunneo vel fusco impletis, haud incrustatis. **Epicute** trichodermiali, multis hyphis atrobunneo-incrustatis. *A. P. manausensi* Sing. differt cystidiis haud incrustatis pigmento resinaceo et hyphis epicutis brunneo-incrustatis et sporis minoribus et hymenophoro magis poroideo et habitatione. In silva tropicali primaria typi campinarana (ad truncos Leguminosarum). *A. P. viridi* (Berk.) Sing. differt sporis majoribus, hymenophoro minus la-

melloso, habitatione atque coloribus (in hoc “totus viridis” et “in terra”).

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 125, 20 VII 1973, *Singer B 11310* (INPA).

Xerocomus carnosus (Rostk.) Sing., comb. nov.

BASIONYM—*Boletus carnosus* Rostk., in Sturm, Flora Deutschl. 3(5), tab. 14. 1844. This is related to *X. spadiceus* (Fr.) Quél. It has all the characteristics visible in Rostkovius’s plate and differs in very long ($11.7-21 \times 3.5-6.3 \mu\text{m}$) spores. The surface of the pileus turns blue with ammonia, a constantly strong and persistent reaction. Neotype: Czechoslovakia, Moravia, Kurimi, Šiberná les, leg. Singer, Křiž, Šmarda, 1 VIII 1974, *Singer C 5733* (F). Also known from collections in Germany, Switzerland, and England.

Boletus heterodermus Sing., spec. nov.

Pileo atro-(rubido)-umbrino, in siccis prope (“cocoa” M&P), subtiliter velutino, convexo, obtuso, 56 mm lato. Hymenophoro tubuloso, poris minutis (3 pro mm) brunneolo-olivaceis, tubis in siccis prope “Cochin” M&P), 8 mm longis, adnatis. **Stipite** pallido, griseolo tincto et fibrillis innatis (haud reticulatis) castaneis variegato, sub lente minute castaneo-pustuloso, ventricoso, solido, 80×24 mm. Mycelio basali sparso, pallido. **Carne** sat firma, vinaceo-rubida fracta, NH_4OH in carne et superficialibus negativam reactionem exhibit.

Sporis $10-13.5 \times 4-5 \mu\text{m}$, e. gr. $11.8 \times 4.3 \mu\text{m}$ aut $10 \times 4.7 \mu\text{m}$, fusoides, levibus, poro germinativo destitutis, plerumque depressione suprahilari, rarius applanatione instructis, dilute melles-brunneis, inamyloideis. **Hymenio**: Basidiis $21-30 \times 7.5-9 \mu\text{m}$, tetrasporis. Cystidiis $22-27 \times 5.5-8 \mu\text{m}$, versiformibus, saepe fusoides vel ampullaceis vel ampullaceo-subcapitatis, optice contentu dissoluto homoganeo impletis, tenuitunicatis. **Hyphis** defibulatis, inamyloideis. Tramate hymenophorali laterali typi Boletorum, hyalino, hyphis fortiter divergentibus in strato laterali. **Epicute pilei** trichodermiali, partim palisadica, partim non palisadica et lenissime gelatinosa, brunnea e pigmento intracellulari dissoluto, sed multis hyphis hyalinis vel flavidulis, incrustationibus nullis; cellulis elongatis in strato inferiore gradatim brevioribus prope superficiem, ibi $11-17 \times 8-12$

μm , dein $0\text{--}38 \times 17\text{--}22 \mu\text{m}$ et liberis, intermixtis nonnullis cellulis terminalibus cystidiformibus, his $13\text{--}40 \times 3.8\text{--}12 \mu\text{m}$, plerumque hyalinis, iodi ope haud aurantiacis, anguste clavatis vel obtuse subulatis, sparsis. Tegumento stipitis (in parte media stipitis) intermittente, pustulas formante, hic hymeniformi, ex elementis $15\text{--}23.5 \times 6\text{--}13 \mu\text{m}$, clavatis vel ventricosis vel subvesiculosis, rotundato-obtusis, rarius ampullaceis, pariete usque ad $0.5 \mu\text{m}$ diam. instructis, melleis, paucis hyalinis efformato.

Ad terram sub Quercu, Magnolia, Lauraceis in silva tropicali-montana inter 1700 et 2500 m alt.

TYPUS—Costa Rica, Puntarenas, Río Burú, August 1983, *Gómez 21548* (F).

Boletus fulvus Peck (non Schaeffer) should be compared, but a type specimen does not exist at Albany (NYS). Our species from Central America is remarkable because of the context turning vinaceous, the colors of the surfaces of the carpophores, and the structure of the covering layers.

Tylophilus potamogeton var. *mitis* Sing., var. nov.

Pileo brunneolo-livido, minore, tubulis albis dein roseolis, **stipite** brunneo apice albo, aequali, **carne** alba, miti. NH_4OH in superficie caerulescit. Characteribus microscopicis eis var. *aquarii* Sing. in Sing., Araujo & Ivory, Nov. Hedwigia Beiheft 77: 122. 1983 simillimis.

Ad terram humosam in silva inundabili typi igapó rarius.

TYPUS VARIETATIS—Brazil, Amazonas, Igarapé do Tarumãzinho, 13 III 1983, *Singer B 12425* (INPA).

Tylophilus montanus Sing., spec. nov.

Pileo primum pallide purpurascense, dein atrocastaneo (in siccis primum “butterscotch,” dein inter “Vandyke Br” et “cocoa Br” centro “bracken” M&P), demum subatro, velutino, impolito, demum subglabrescente, margine anguste incurvo et acuto demum subobtusio, pulvinato, dein convexo et obtuso, superficie demum minute rivuloso vel rimoso, 110 mm lato. **Hymenophoro** tubuloso, tubulis moderatim longis, albis, tactu, fractu et aetate fumosis vel brunneo maculatis, poris pri-

mum albis, dein brunnescentibus, exiguis subisodiametricis, rotundis vel angularibus, hymenophoro ad stipitem adnexo, dein leniter circum eum depresso. **Stipite** concolori pileo in parte superiore sed plerumque \pm pallidiore in parte inferiore, primum levi atque subtiliter reticulato immediate sub hymenophoro, dein ad apicem longitudinaliter costato-sulcato, costis in parte mediana anastomosantibus et superficie hic fortiter reticulato, in tertia parte inferiore levi, interdum inter reticulationem fortem et partem levem zona subtiliter reticulata intercalata, venis reticulationum nonnihil obscurioribus colore basico stipitis, solido, bulboso, dein in parte apicali \pm aequali, usque ad $83 \times 51 \text{ mm}$. Mycelio basali haud albo, sparso, cum parte inferiore stipitis in siccis pallide alutaceo. **Carne** alba, vix mutibili fractu, sed siccando flavescense, odore amylaceo, sapore miti.

Sporis $10\text{--}14.5 \times 4\text{--}5.5\text{--}(6) \mu\text{m}$, plerumque $11\text{--}13 \times 4.5 \mu\text{m}$, subfusoides, depressione vel appanatione suprahilari instructis, $Q < 3$, firme vel subcrassiuscule tunicatis, levibus, subhyalinis vel pallidissime melleis (KOH), dibiliter vel moderatim pseudoamyloideis. **Hymenio**: Basidiis $21\text{--}35 \times 8\text{--}10 \mu\text{m}$, tetrasporis. Cystidiis ampullaceis, tenuitunicatis, hyalinis, ampullaceis, nonnullis (pseudocystidiis sensu Wolfe) corpusculis $1.5\text{--}6 \mu\text{m}$ diam. internis, castaneis vel brunneolis, iodi ope subbadiis impletis, omnibus sat numerosis, $30\text{--}43 \times 6.5\text{--}10.5 \mu\text{m}$. Cheilocystidiis haud differentiatis. **Hyphis** defibulatis, satis angustis, Tramate hymenophorali laterali typi Boleti, mediostrato angusto, vix gelatinoso, subregulari axiali, pallide flavido, strato laterali amplo, hyalino, \pm gelatinoso. **Epicute pilei** trichodermiali-palisadica, hyphis in cellula terminali cystidiformibus, his dermatocystidiis $14\text{--}30 \times 3.5\text{--}7 \mu\text{m}$, nonnullis usque ad $8.2 \mu\text{m}$ latis, obtusis vel subacutis, hyalinis vel frequentius luteo-brunneis pigmento intracellularem et intraparietali, fusiformibus vel clavatis, nonnullis hyphalibus nec differentiatis. Elementis epicutis iodi ope (reagente Melzeri) corpusculis rotundis internis atrocastaneis impletis. Hypodermio cutiformi, ex hyphis elongatis, castaneis efformato. Incrustationibus raris et inconspicuis vel nullis. Stratis gelatinosis nullis. Tegumento stipitis supra reticulationes subhymeniformi, e membris terminalibus trichodermii palisadici cystidiformibus efformato, cellulis inferioribus elongatis vel brevibus (e. gr. $15 \times 1 \mu\text{m}$) catenulatim dispositis; dermatocystidiis $15\text{--}36 \times 3\text{--}7 \mu\text{m}$, hyalinis vel luteobrunneis vel succineis, forma sua dermatocystidiis pilei simillimis, incrustatione nulla vel vix manifesta.

Ad terram in Querceto-Magnolieto tropicali-montano gregatim.

TYPUS—Costa Rica, Cartago, Chonta, 2500 m alt., 11 VII 1982, *Gómez 19199* (F).

Austroboletus graciliaffinis Sing., spec. nov.

Pileo fusco (15 J 11, sicco 8 E 12 M&P), rivuloso-subgranuloso, sub lente fibrillis flocculoso-connatiss castaneis in siccis oblecto, convexo, centro plerumque depresso in maturis, 52 mm lato. **Hymenophoro** tubulari, pallide sordideque roseolis, ad ipsum stipitem sublamellate elongatis, poris concoloribus, 0.3–1.5 mm latis, inaequalibus, sed plerumque subsodiametricis, subtiliter fimbriatis, hymenophoro circum stipitem fortiter depresso. **Stipite** sordide albedo, basin versus griseolo (“sandy beige” vel “elephant skin”); ibi interdum tegumento ochraceo evoluto), apicem versus albo, macroscopice glabro et levi, in siccis sub lente subferrugineo- vel castaneo-brunneo fibrilloso vel punctato ut minime basin stipitis versus, solido, in medio superiore aequali vel subaequali, in medio inferiore crassiore, sed haud bulboso, 88 × 10 mm, apice ± 6 mm diam., et sub hymenophoro demum nonnihil dilatato. Velo nullo. Mycelio basali sparso, albo, parte in stipite ascendente interdum ochrascente. **Carne** alba, immutabili fractu, in basi stipitis superficiei concolori, inodora miti.

Sporis 12.7–15.3 × 6.3–8 μm, fusoides, depressione debili suprahilari instructis, circumferentia asperulis, ornamentatione spinulosa (spinulis tenuibus, cylindraccis, interdum lineariter aggregatis melleo-brunneolis), paullum pallidioribus ceterum sed perisporio levi, hyalina, paullum evoluto et fugaci oblectis. **Hymenio**: Basidiis 26–29 × 10.7–11.5 μm, (2–)4-sporis. Cystidiis 28–48 × 6.7–10.7 μm, ampullaceis vel subampullaceis, aureomelleis vel sordide melleis. **Hyphis** defibulatis. Tramate hymenophorali bilaterali typi Boleti, mediostrato paulum vel haud gelatinoso, hyalino vel pallide aureo, hyphis 4–5 μm latis; strato laterali amplo, hyalino, fortiter gelatinoso, hyphis 1–8 μm latis. Subhymenio ex elementis exiguis, haud gelatinosis, hyalinis efformato. **Epicute pilei** ex fibrillis fasciculatis efformata, his catenulis cellularum ± erectarum, flavidarum, frequenter vesiculosarum (17.8–55.5 × 12–47 μm) aut elongatarum (15.3–57 × 8–24.5 μm) haud vel vix gelatinosis, parietibus tenuibus instructis, incrustatione nulla vel

inconspicua oblectis, apice superno interdum mucronato-effilato instructis consistentibus. Inter fibrillis epicute trichodermiali, ex hyphis intertextis efformata et catenulis sparsis singularibus intermixtis eis fibrillarum simillimis. Maculis punctiformibus pigmentatis superficiei stipitis e pilis plerumque cylindraccis rarius anguste clavatis vel fusiformibus, 26–60 × 5–9.5(–12.8) μm efformatis, his luteis, haud incrustatis, repentibus vel erectis, saepe fasciculatis, interdum furcatis, obtusis. Inter eas hyphis superficialibus hyalinis tantum visis.

Ad terram humosam in silva tropicali typi campinarana supra solum arenosum.

TYPUS—Brazil, Amazonas, near road Manaus-Caracará, km 45, 31 III 1980, leg. *Antonio Weber, Singer B 12088* (INPA).

This species is related to *A. gracilis* (Peck) Wolfe and *A. rionegrensis* Sing.

RUSSULACEAE Roze

Russula austromontana Sing., spec. nov.

Pileo griseo vel fusco marginem versus pallidior et sordidior et pallide-virgato, demum areis ochreis variegato, glabro, marginem versus longe sulcato, convexo, dein plano, centro profunde depresso, 24–48 mm lato. **Lamellis** pallidis subconferis, subangustis vel sat latis, aequalibus vel paucis lamellulis intermixtis, simplicibus, intervenosis, acie demum saepe fuscidulis, subliberis. **Sporis** albidulis, in massa crassa autem albedo-cremeis (inter Ib et IIb Romagnesii). **Stipite** pallido, sed e basi fusciscente vel grisente, at in siccis KOH et formalinae ope haud rubescente (neque intus), sublevi, aequali, 22–30 × 3–8 mm, basi saepe contracto. **Carne** albida vel partim subgriseola, nec rubescente nec nigrescente; odore caseoso in vegetis, dein piscium, sapore miti vel submiti.

Sporis 6.5–8.5 × 5.5–7 μm, ornamentatione typi IV, V, VI, raro IV-II, IV-VIII, plerumque IV vel V, 0.4–0.7 μm projiciente inclusa, hyalinis vel subhyalinis, amyloideis et macula amyloidea manifesta suprahilari instructis. **Hymenio**: Basidiis 23–31 × 9–12 μm, tetrasporis. Macrocystidiis 53 × 9.5 μm, contentu subtiliter vermiformi impletis, appendiculo usque 3.5 μm longo tenui ornatis, fusoides, hyalinis. **Hyphis** defibulatis, sphaerocyst-

tibus numerosis intermixtis, in tramate hymenophorali sphaerocystibus nec non hyphis filamentosis et hyphis oleiferis (cum contentu granuloso) numerosis. Omnibus hyphis et sphaerocystibus inamyloideis. **Epicute pilei** ex hyphis ascendentibus, saepe furcatis, multiseptatis, 4–8 μm latis efformata, membris terminalibus 14–42 \times 3.5–9 μm , his cystidiformibus (dermatocystidiis ciliatis), fusioideis vel subulatis, acutis vel subacutis, tenuitunicatis, hyalinis, multis intus subtiliter granularibus, aliis haud granularibus (his generatim minoribus). Subcute gelatinosa in strato inferiore ixocutem, in superiore ixotrichodermium formante, 40–45 μm alta. Hypodermio minus alto, haud gelatinoso, ex hyphis in KOH (in siccis) ochraceis, intertextis efformato. Tegumento stipitis epicuti pilei simili sed dermatopseudocystidiis rarioribus praesentibus quorum apices rotundato-obtusi sunt. Pigmentis, praesertim in strato externo stipitis et eius tegumento, in areis definitis manifeste intraparietalibus atque brunneis (ita ut in *R. ochroleuca*), in NH_4OH et KOH visibilibus.

Ad terram sub *Quercu* sp. in quercetis, solitario vel gregatim.

TYPUS—Costa Rica, Cartago, El Empalme, 2300 m alt., 23 VII 1981, *Singer B 12402* (F). Additional collection: Alajuela, San Ramón, Bella Vista, under *Quercus brenesii* Trelease, 24 VII 1981, *Singer B 12420* (F).

This *Russula* belongs in sect. *Foetentes* and it is close to *R. pectinata* Fr. but differs in simple, almost equal lamellae, more slender stipe, paler spore print, odor and taste, and the acute to subacute dermatocystidia of the pileus. In contrast to this, the spore print of *R. pectinata* Fr. sensu Fr., Sing. corresponds to IIb–c in Romagnesi's plate, and its odor in young specimens is more variable than in *R. austromontana*; its taste is moderately acid. This species from the Central American mountains appears to be intermediate between *R. amoenolens* Romagnesi and *R. pectinata* but the spore print is darker and the taste milder than in both.

***Russula caucaensis* Sing., spec. nov.**

Pileo rubro (ut in *R. integra* = *velenovskiyi*), in zona marginali siccando "clove pink" (M&P), centro in siccis multum obscuriore (e. gr. 8 J 1), haud

nitido nec viscido, glabro, sub lente punctulato, ad marginem obtusum (nec rotundatum) breviser sulcato, convexo, centro subumbilicato vel latius depresso, 49 mm lato. **Lamellis** albis, confertis, leniter intervenosis, paucis lamellis intermixtis, ad stipitem aut bifurcatis aut simplicibus, ceterum paucis vel nullis furcatis, mediocriter latis, subluberis. Sporibus in massa inter Ia et Ib Romagnesii (aestimatio). **Stipite** albo, glabro, sublevi, subaequali vel subventricoso, apice ipso saepe dilatato, 38 \times 9–11 mm. **Carne** alba, immutabili, miti, inodora.

Sporibus 7.5–8.5 \times 6.5–7.8 μm , subglobosis, ornamentatione typi IV, IIIb 0.5–1 μm projiciente (plerumque 0.8 μm) et macula suprahilari amyloidea munitis, amyloideis, hyalinis, appendice hilari 1.2–1.8 μm alto. **Hymenio**: Basidiis 27–36 \times 9–12.5 μm , tetrasporis, sterigmatibus 3–6 μm longis. Macrocystidiis praesentibus (sed haud omnibus contentu optice visibili munitis), nonnullis contentu vermiformi, aliis granulari gaudentibus, contentu saepe in parte superiore cellulae limitato, pariete tenui vel firma instructis, plerumque obtusis, multis autem appendiculo usque ad 6 μm longo munitis, 36–50 \times 6–9.5 μm , fusioideis vel subclavatis. **Hyphis** defibulatis. Tramate hymenophorali multis accumulationibus sphaerocystium instructis, hyalina, inamyloidea. **Epicute pilei** e dermatopseudocystidiis macrocystidiis hymenii similibus et nonnullis hyphis filamentosis efformata, paullum gelatinosa; dermatopseudocystidiis 3–6.5 μm tantum latis; hyphis primordialibus (incrustatis) nullis. Subcute gelatinosa profunda, subtus ex ixocute, superne ex ixotrichodermio efformata. Hypodermio cutiformi, ex hyphis filamentosis, haud gelatinosis efformato. Tegumento stipitis dermatopseudocystidiis e. gr. 23.5 \times 4 μm , ceterum dermatopseudocystidiis pilei simillimis.

Sulfovanillina supra superficiem stipitis siccis numquam laete cinnabarinam reactionem, sed brunneolam praebens.

Ad terram sub *Quercu humboldtii* Bonpl. in Humb. & Bonpl.

TYPUS—Colombia, Cauca, "Los Araoz", 100 km S of Cali, 12 IV 1968, *Singer B 6046* (F).

Although when fresh this species reminds one of *R. integra* (L. ex Vitt.) Fr. sensu L., Sing. (non Maire, Romagnesi), it is rather close to *R. emetica* (Schaeffer ex Fr.) Pers. ex Fr. but differs from the latter in spore ornamentation type and mild taste.

Russula delica Fr. var. *centroamericana* Sing., var. nov.

Pileo albo, siccando partim sordide pallideque grisello, glabro. **Lamellis** subdistantibus (ad marginem 4 lamellis pro 10 mm), albis. Sporarum massa inter Ia et Ib Romagnesii; **stipite** pilei diametro breviori, albo dein partim sublurido sed haud glauco nec caeruleo, solido, sublevi, glabro; **carne** alba, immutabili, miti, odore leniter saponaceo, sulfovalinninae ope purpurascence-carminea, mox brunnea.

Sporis 9.7–12.5 × 9–11 μm (ornamentatione IIIa, rarius IIIb, IIIb-II, II, –0.9–1.3 μm projiciente haud inclusa), macula suprahilari amyloidea munitis, hyalinis. Basidiis 39–48 × 11–13.5 μm tetrasporis, sterigmatibus (5–)6–10(–15) μm. Cystidiolis sparsis, 25–44 × 5–13 μm, versiformibus, absque contentu, tenuitunicatis. Macrocytidiis sulfovanilliniae ope (decem d. post exsiccationem) haud caerulescentibus, sed in parte superiore azurei cresylici ope caerulescentibus, pariete tenui vel firma, interdum leniter incrustata, in azureo cresylico haud metachromatica instructis, numerosissimis, 42–96 × 5–13.5 μm, plerumque fusoides, contentu vermiformi sparso vel frequentius denso impletis, interdum subcylindraceis, interdum appendiculatis, raro capitulatis vel clavatis, e parte inferiore subhymenii ortis. **Hyphis** defibulatis, inamyloideis. Tramate hymenophorali cum sphaerocystibus sed per 300–400 μm ab acie plerumque ex hyphis filamentosis (rarius subinflatis) et hyphis oleiferis (nonnullis ex eis macrocytidiis conjunctis) 2–7.5 μm latis efformato. Subhymenio ex hyphis filamentosis multiseptatis vel isodiametricis exiguis, intertextis, hyalinis efformato; hyphis laticiferis nullis. **Epicute pilei** trichodermiali, profunda, sublaxa sed haud gelatinosa, hyphis primordialibus, filamentosis, 3–8 μm latis, incrustatis verrucis hyalinis, tenuiparietalibus, contentu destitutis; dermatocystidiis et dermatopseudocystidiis nullis. Subcute gelatinosa nulla. Hypodermio moderatim profundo, ex hyphis filamentosis efformato et nec ab epicute nec a tramate pilei abrupte delimitato.

In solo non calcareo in Querceto-Magnoliето tropicali-montana.

TYPUS—Costa Rica, Cartago, La Chonta, 2500 m alt., 11 VII 1982, *Gómez 18191* (F).

This variety differs from related forms mainly in distant lamellae while otherwise close to *R. brevipes* Peck.

Russula dipigmentata Sing., spec. nov.

Pileo laete vitellino, margine praecipue siccando purpurascence (“laurel oak” M&P), glabro, viscido, sub lente subtiliter punctulato, in vegetis demum breviter sulcato sed in siccis levi, margine rotundato-obtusio, convexo, mox margine plano-depresso, 48 mm lato. **Lamellis** aurantioflavis, confertis, mediocriter latis, attenuato-attingentibus. Sporis in massa ochraceis, IIIa Romagnesii. **Stipite** albo, glabro, subaequali, 80 × 11 mm. **Carne** alba, miti, inodora.

Sporis 9–10.5 × 7.5–8.7 μm, raro usque ad 12.5 × 10.3 μm, subglobosis, flavis, ornamentatione typi IV, IV-II, IV-VIII, V (paucis VI), projiciente 0.3–0.6 μm, in sporis giganteis saepe typo VII ornatis, amyloideis. **Hymenio**: Basidiis 30–39.5 × 10–12.5 μm (2–)4-sporis. Macrocytidiis praesentibus (sed post novem menses haud caerulescentibus in sulfovanillina), 36–60 × 5–9 μm, versiformibus, frequenter fusoides sed plerumque obtusis, interdum appendiculatis, tenuitunicatis, in parte superiore plerumque granulis subtilibus densis vel omnino granulis admodum sparsis repletis. Cheilocystidiis cystidioloformibus, e. gr. 15 × 5.5 μm, ventricosis vel clavatis, tenuitunicatis, “vacuis.” **Hyphis** defibulatis. Sphaerocystibus in tramate lamellarum numerosis. **Epicute pilei** e dermatocystidiis (cellulis terminalibus hypharum ± 2 μm crassarum) haud numerosis, clavatis, ± 5 μm latis et hyphis interdum furcatis et hyphis primordialibus incrustatis, filamentosis, 2.5–5 μm crassis, flavidis efformata, paullum gelatinosa. Subcute gelatinosa bene evoluta. Hypodermio cutiformi. Pigmentis duobus (1) salmoneo dissoluto, (2) granulati, solido luteo in zona marginali pilei sicci praesentibus. Tegumento stipitis e cellulis terminalibus vix differentiatis et saepe ascendentibus et hyphis primordialibus eis pilei simillimis efformato.

Ad terram in quercetis (cum Arbuto et Pinis) mixtis, solitario.

TYPUS—Spain, Catalonia, Tossa, 24 X 1979, *Singer C 9610* (F).

This species differs in colors from *R. murrillii* Burl., a species, like *R. dipigmentata*, belonging in subsect. *Amethystinae* and not rare in Western North America and Japan. *Russula flavocitrina* Blum nom. nud. is possibly identical.

Russula eogranulata (Secr.) Sing., comb. nov.

BASIONYM—*Agaricus eogranulatus* Secr., Mycogr. Suisse 1: 505. 1833.

NEOTYPUS—Switzerland, Vaud, Sauvabelin above Lausanne, 25 VI 1971 (the original locality!), Singer C 5425 (F). As described by Secretan.

Pileo roseolo, furfuroso-pruinato; sporis lacteis in cumulo, ornamentatione typi IV-VI, VII-II, (0.3–)0.4–0.5(–0.7) μm alta; macrocystidiis praesentibus in hymenio, in epicute absentibus. In silva frondosa sub fagis et nonnullis quercubus.

Russula gelatinascens Sing., spec. nov.

Pileo albo, demum ferrugineo-maculato, sicco gilvescente et margine albedo, in vegetis subtomentoso et opaco sed sub pluviis viscidulo, levi, convexo, centro infundibuliformi, \pm 110 mm lato. **Lamellis** pallidis (haud glaucis nec caeruleis), confertis, confertissimis fere, satis angustis, lamellulis intemixtis sed haud tri- nec polydymis, siccando pallide alutaceis et albo-pulverulentis (e sporis), decurrentibus, ad marginem pilei acutis, sinuatis. Sporis in massa inter A et B (Crawshayi), quam B pallidioribus. **Stipite** candido, levi, aequali, 48 \times 29 mm. **Carne** candida, immutabili, miti sed masticatione lento subpiperino, odore fructuum levi, siccando inodora.

Sporis 9.5–13.5 \times 9.3–12.3 μm , globosis vel subglobosis, ornamentatione typi IIIa vel IIIa-II gaudente, qua 0.7–1.5 μm projicit, hyalinis, amyloideis. **Hymenio**: Basidiis 52 \times 10.3 μm tetrasporis. Macrocytidiis numerosissimis, contentu vermiformi abundante repletis, 70–76 \times 8–9 μm . **Hyphis** inamyloideis, defibulatis. Sphaerocystibus in tramate hymenophorali numerosis, sat voluminosis. **Epicute pilei** e hyphis plus minusve applicatis filamentosis, incrustatione nulla vel sparsa gaudentibus, plurimis hyalinis efformata et inter eas dermatopseudocystidiis paucis praesentibus, his e. gr. 83 \times 4.8 μm , anguste fusoideis vel filamentoso-subventricosis, subhyalinis, contentu vermiformi vel granuloso impletis. Subcute gelatinosa profunda praesente, ex hyphis filamentosis (sed hinc illinc subincrassatis), distantibus in KOH efformata. Hypodermio cutiformi intermittente et interdum paullum differentiato. Tegumento stipitis e dermatopseudocystidiis numerosis, anguste ventricosis et longis, 4.5–7 μm latis efformato.

Ad terram et humum in silva mixta (*Picea* et *Fagus*).

TYPUS—Czechoslovakia, Bohemia, Bradlo, Přírodné Reservace, 10 IX 1970, Singer C 5115 (F).

The only other species of sect. *Plorantes* which has a deep gelatinous subcutis is *R. fuegiana* Sing. from Tierra del Fuego, which differs in the ornamentation type of the spores.

Russula gomezii Sing., spec. nov.

Pileo rosaceo (colore *R. rosaceae* gaudente), velutino-subtomentoso, sicco, margine mox sulcato, obtuso, ceterum convexo, dein centro appanato, umbilicato, depresso, 18–31 mm lato. **Lamellis** albis, sat confertis vel subconfertis, sat latis, subdecurrentibus. Sporis in massa inter Ia et Ib Romagnesii, quam Ib pallidioribus. **Stipite** pileo concolori sed apice frequenter albo, subaequali vel basi acuminato vel apice angustato, 21–34 \times 4–6 mm. **Carne** alba, immutabili, inodora, miti.

Sporis 7–7.5(–8) \times 6.2–6.5 μm , plerumque subglobosis, hyalinis, amyloideis, ornamentatione typi VI, IV, IV-II, 0.2–0.5 μm projiciente gaudentibus, macula suprahilari amyloidea manifesta instructis. **Hymenio**: Basidiis 22–31.5 \times 6.5–12 μm , frequentius ventricosis quam clavatis, tetrasporis. Cystidiis 37–60 \times 8–11 μm moderatim numerosis, basidiomorphis, interdum 1–4 appendiculis sterigmatiformibus ornatis, contentu nullo optice visibili, sulfovanillinae ope haud caerulescentibus. Cheilocystidiis 25–41 \times 4–7.5 μm , utrifurmis, apice subcapitatis vel claviculatis et 3.5–6.7 μm diam., paucis minute appendiculatis ita ut cystidia, paucis interne septatis. **Hyphis** inamyloideis, defibulatis. **Epicute pilei** ex hyphis primordialibus efformata, his 2.5–5.5 μm diam., roseis in H₂O, verrucose incrustatis. Dermatopseudocystidiis nullis (reactione sulfovanillinae nulla, negativa). Subcute gelatinosa nulla.

Sulfovanillinae ope superficies sicca stipitis ad laete-rubrum mutatur, sed mox brunescit.

Ad terram humosam in quercetis (*Quercus brenesii* Trelease) solitario.

TYPUS—Costa Rica, Alajuela, San Ramón, Bella Vista, 24 VII 1981, 1200 m alt., Singer B 12429 (F). Additional collection: same locality, 26 VII 1981, Singer B 12501 (F).

This species belongs in subsect. *Lilaceinae* and is close to *R. subminutula* Sing. and *R. praetenus* Murr. *Russula minutula* Velen. is also similar but

has different odor and taste, lacks differentiated cheilocystidia and has a much more persistent reaction with sulfovanillin.

Russula hongoi Sing., spec. nov.

Pilei brunneo (prope "hazel" M&P) margine pallidiore, cuticula a margine haud retracta, glabra, sub lente in centro pruinata instructo, margine subacuto, convexo, centro depresso (in siccis subumbilicato), 48 mm lato. **Lamellis** albis, aequalibus, confertis, attenuato-subliberis. **Sporis** in massa haud visis, sed evidenter quam Romagnesii Ib haud obscuriore. **Stipite** albo, siccando leniter brunnescente, cylindraceo vel subaequali, solido, 37 × 10 mm. **Carne** alba, immutabili, elastico-firma, miti, inodora.

Sporis 5.7–6.7 × 5–6.3 μm (ornamentatione inclusa), subglobosis vel globosis, hyalinis, amyloideis, ornamentatione typi IV, IIIb, 0.3(–0.4) μm projiciente munitis, macula suprahilari in zona levi praesente sed admodum debiliter amyloidea. **Hymenio:** Basidiis tetrasporis. Cystidiis in sulfovanillina vix manifeste caerulescentibus. Hyphis inamyloideis, defibulatis. **Epicute pilei** in trichodermio palisadico, e structura ei *R. vescae* simili efformata, inferne duobus sphaerocystibus, superne cellulis gradatim angustioribus superimpositis; dermatopseudocystidiis nullis, pigmento hyalino vel brunneolo-hyalino, non intraparietali nec incrustante; sphaerocystibus 12–14 × 11 μm. Subcute moderatim tantum gelatinosa et haud profunda praesente, sed intermittente. Ad terram in silva Castanopsisidis mixta, solitario.

TYPUS—Japan, Kyoto, Mt. Daimonji, 14 IX 1984, *Singer A 4074* (F).

This is similar to *R. brunneola* Burl. and related to *R. vesca* Fr. The small spores and the color of the pileus remind one of *R. pilati* Zvára.

Russula mitissima Sing., spec. nov.

Pileo rubro (ut *R. emetica*) vel roseo, subnitente, centro lurido vel subolivaceo, in vegetis viscido, glabro, ad marginem per 5–6 mm sulcato et obtuso, convexo, mox centro depresso, 18–35 mm lato. **Lamellis** albis, moderatim latis vel satis angustis, haud interveosis, confertis, attenuato-subliberis. **Sporis** in massa albis (la Romagnesii). **Stipite** albo, siccando interdum leniter brunnes-

cente, numquam roseo, subaequali vel attenuato aut basin aut apicem versus, 18–36 × 4.5–8 mm. **Carne** alba, immutabili, inodora, miti.

Sporis 7–9.5 × 6.5–8 μm, hyalinis, subglobosis vel breviter ellipsoideis, ornamentatione typi IV, IIIb, in paucis V–VI (lineis connectivis in sporis typi IV partim tenuissimis et microscopio sub immersione vix visibilibus, qua ex re omnes spores typi IIIb considerari possunt), 0.5–1.2 μm projiciente munitis, amyloideis, macula suprahilari amyloidea gaudentibus. **Hymenio:** Basidiis (21–)26–29.5 × 7.5–12 μm. Macrocystidiis 24–39 × 5.5–8.5 μm, fusoides, rarius ampullaceis vel cylindraceis, appendiculo 1.5–4.5 μm longo ornatis vel rarius destitutis, contentu vermiformi manifesto et abundante (sulfovanillinae ope in siccis vix caerulescente) repletis. **Hyphis** defibulatis, inamyloideis. Tramate hymenophorali e sphaerocystibus et multis hyphis filamentosis efformato. **Epicute pilei** e dermatopseudocystidiis 20–45 × 3–10 μm efformatis, his sat numerosis, versiformibus, saepe ventricosis vel clavatis, ceterum macrocystidiis simillimis. Subcute gelatinosa hyalina 10–30 μm alta. Hypodermio cutiformi, flavido, 10–30 μm alto.

Ad terram sub *Quercu brenesii* Trelease.

TYPUS—Costa Rica, Alajuela, San Ramón, Belavista, 24 VII 1981, *Singer B 12428* (F).

This species is related to *R. caucaensis* Sing. (see above).

Russula pluteoides Sing., spec. nov.

Pileo umbrino in centro, pallido ad marginem, glabro, levi, sed margine longe sulcato-pectinato, et disco minute ruguloso, acuto ad marginem, campanulato, umbone exiguo centrali munito, 15–16 mm lato. **Lamellis** albidis, angustis, omnibus fere aequalibus, simplicibus, nonnullis prope stipitem bifurcatis, subliberis. **Sporis** in massa separata haud visis, sed supra lamellis ± IIa Romagnesii. **Stipite** pallide avellaneo-grisello, levi, basin versus attenuato, 18 × 6 mm, ad basin 3 mm diam. Velo nullo. Subiculo nullo. Mycelio basali albo, strigoso. **Carne** alba, immutabili, inodora, miti.

Sporis 7–7.8 × 6–6.8 μm, subglobosis, hyalinis, ornamentatione typi VI, V (sed lineis connectivis tenuissimis et microscopio sub immersione vix visibilibus praesentibus ita ut typus IIIb evadit), 0.3–0.7 μm, plerumque ± 0.5 μm projiciente

munitis, macula suprahilari amyloidea praesente aut absente, sed aut exigua aut submota aut vix amyloidea. **Hymenio:** Basidiis 29–32 × 8.5–9 μm, tetrasporis. Cystidiis 45–67 × 5.5–7.2 μm, sat numerosis, fusioideis, interdum subulatis, acutis vel obtusis, tenuitunicatis, pariete azurei cresylici ope haud metachromata sed azurea instructis, appendiculo spiniformi vel globuloso 1–3.5 μm alto frequenter munitis, optice vacuis vel disperse subtiliterque granulosis. **Hyphis** inamyloideis, defibulatis. Tramate hymenophorali sphaerocystibus numerosis, voluminosis, tenuitunicatis munito. **Epicute pilei** e dermatocystidiis ciliiformibus et cellulis terminalibus hypharum efformata, vix vel lenissime gelatinosa; dermatocystidiis 18–105 × 2.5–4.5 μm, anguste fusioideis vel lanceolatis, acutis, tenuiter vel firme tunicatis, paucis subtiliter granulati-incrustatis, saepe intus septatis, interdum furcatis, nonnullis intus sparse subtiliterque granulosis, frequenter duobus e hypha incrassata ortis, nonnumquam basin versus multiseptatis, raro medio constrictis. Dermatopseudocystidiis nullis. Subcute gelatinosa in strato infero ixocutiformi, in supero gradatim ixotrichodermiali. Hypodermio cutiformi, hyalino.

Ad folia dicotyledonea in silva tropicali-montana *Quercu brenesii* Trelease dominante.

TYPUS—Costa Rica, Alajuela, San Ramón, Bella Vista, ± 1900 m alt., 26 VII 1981, *Singer B 12500* (F).

This species reminds one of *Pluteus* by its habit as well as by its colors, but is a true *Russula*, sect. *Diversicolores*.

Russula psammophila Sing., spec. nov.

Pileo albo, interdum maculis hygrophanis visis, dein e centro pallide biso vel sordide grisello (haud flavido), levi, margine subobtusato sed haud rotundato, demum obtuso, post pluvias viscido, dein cito sicco, convexo, centro mox abrupto angustateque depresso, acute depresso vel umbilicato, 33–80 mm lato, plerumque 45–80 mm lato. **Lamellis** albis, dein salmoneo-aurantio-cremeis, raro cremeis, confertissimis vel confertis, mediocriter latis (± 6 mm), haud vel vix intervenosis, subadnexis vel subliferis, paucis furcatis. Sporibus in massa cremeis (IIb Romagnesii). **Stipite** albo vel albedo, frequenter ad basin vel e basi subalutaceo, levi vel lenissime subruguloso, glabro, solido, demum in-

tus spongioso-farcto, aequali vel leniter attenuato apicem versus, rarius ventricosus, 33–70 × 14–28 mm, plerumque 45–70 × 16–26 mm. **Carne** alba, immutabili fractu, in lamellis quoque immutabili, odore nullo vel debiliter fructuum, sapore in lamellis acris, dein subacris, in stipite miti vel submiti, in pileo vix amaro.

Sporis (6.5–)7.5–9.5 × (5.3–)5.8–7.5 μm, plerumque 8–9 × 6.5–7.5 μm vel 8–8.5 × 5.8–6.2 μm, i.e. subglobosis vel breviter ellipsoideis, hyalinis in KOH, amyloideis, ornamentatione typi IV vel IIIb sed frequenter IIIb-II, IIIb-VIII, IV-VIII, paucis II vel II-VIII, lineis connectivis interdum tenuissimis, projiciente 0.4–1 μm, plerumque ± 0.7 μm asperis, macula suprahilari amyloidea manifesta munitis. **Hymenio:** Basidiis 28–52 × (5.3–)8–11 μm, tetrasporis, interdum 2–4-sporis (et tunc pro ratione elongatioribus, atque sporibus plurimis subellipsoideis), clavatis. Macroscystidiis numerosis vel sat numerosis ad latera, numerosis vel numerosissimis ad aciem lamellarum, 45–85 × 7.5–15 μm, ventricosis vel fusioideis, rarius cylindraceis, appendiculo brevi interdum apiculatis, rarius mucronatis, pariete tenui vel firma, apice in non-apiculatis obtuso-rotundatis, rarius subacutis, contentu granulati vel vermiformi ex toto fere impletis et sulfovanillinaceo ope caerulescentibus. **Hyphis** inamyloideis, defibulatis. Tramate hymenophorali filamentoso et sphaerocystibus medianis et voluminosis, sed aciem lamellarum versus saepe catenulatis praesentibus. **Epicute pilei** e dermatocystidiis obtusis vel acutis interdum leniter incrustatis, nec non dermatopseudocystidiis in sulfovanillina caerulescentibus, versiformibus atque hyphis oleiferis efformata. Subcute gelatinosa 50–85 μm alta, hyalina, ex hyphis ± ascendentibus 0.8–3 μm latis, laxe dispositis efformata. Hypodermio cutiformi, ex hyphis filamentosis, cum hyphis oleiferis intermixtis, tenuitunicatis vel rarius parietibus usque ad 0.6 μm crassis instructis efformato. Inter hypodermium et subcutem nonnullis dermatopseudocystidiis 40–85 × 3–8 μm (endocystidiis) intercalatis. Tegumento stipitis e dermatopseudocystidiis efformato.

FeSO₄ cum carne stipitis grisascens, supra corticem stipitis roseologrisascens. Sulfovanillina supra stipitem purpurascens, mox brunnescens. Sulfoformol supra stipitem grisascens (usque ad chalybaeum vel griseo-roseolum). KOH supra pilei superficiem: O. Phenol cum carne atrocasteum.

Ad terram humosam sub quercubus in silvis quercinis et mixtis, gregatim.

TYPUS—USA, Illinois, Lake County, Illinois State Beach Park pr. Zion, 1 VIII 1982, *Singer N 5046* (F). Additional collection: same locality, 28 IX 1983, *Singer N 5135* (F).

This species is very closely related to *R. anomala* Peck but has somewhat smaller spores which are more frequently cristulate, and the pale buffish to cream color in the more narrowly depressed pileus is here absent; also, the blue sulfoformalin reaction of *R. anomala* is absent, and the taste is less or not at all bitter. *Russula albella* Peck differs in reticulate (type IIIa) spores. *Russula albidula* Peck is a much smaller species, with reticulate (IIIa) spores, but since no type had been located, it has often been confused with other whitish species, possibly also *R. psammophila*. What may be a variety or form of *R. psammophila* has been collected in Argentina (La Plata, Parque Pereyra, under planted oaks and pines, 30 III 1966, *Singer S 700* (BAFC), as *Russula exilis* Sing. in herb., ined.) and can be distinguished from the type only in narrower spores, partly bisporous basidia, presence of cystidioles, and many ciliate dermatocystidia. It is most certainly not native to South America but must have been introduced from North America.

***Russula semililacea* Sing., spec. nov.**

Pileo dilute purpureo, haud nitente (in siccis inter “cedar wood” et 55 H 1 M&P), et tunc centro subpallescente, sed in vegetis centro flavido, margine brevissime (2 mm) sulcato et obtuso, convexo, dein applanato centro leniter depresso 62 mm lato. **Lamellis** pallide alutaceo-flavis in siccis, albidis et immutabilibus fractu in vegetis, medicriter latis, confertis, attingentibus. **Sporis** in massa haud separatis sed supra lamellas siccas \pm Ib Romagnesii. **Stipite** albo, nonnihil brunnescente tactu, spongioso-farcto, subruguloso, glabro, subaequali, 71×16 –17 mm. Mycelio basali albo, subtiliter tomentosio. **Carne** alba, immutabili, inodora, miti.

Sporis 9.8 – 12.7×7.8 – $10.8 \mu\text{m}$, plerumque breviter ellipsoideis, appendice hilari 1.3 – $2 \mu\text{m}$ longa, hyalinis, ornamentatione typi IV, minus frequenter V, VI, projiciente 1 – $1.3 \mu\text{m}$ et ex aculeis cylindraceutis efformata munitis, amyloideis. **Hymenio**: Basidiis 32 – 33×11 – $13.5 \mu\text{m}$, tetrasporis. Macrocystidiis moderatim numerosis, ventricosio-ampullaceis vel fusoides, tenuitunicatis, acutis vel

obtusis, frequenter appendiculo 2.5 – $6 \mu\text{m}$ longo ornatis, ex integro vel in centro vel in apice tantum accumulatione contentus aculeifirmis vel vermiformis, sulfovanillinae ope caerulescentis repletis, sed nonnullis cystidiis contentu tali destitutis, his ad aciem lateraque lamellarum praesentibus. **Hyphis** inamyloideis, defibulatis. Tramate hymenophorali e sphaerocystis sat numerosis, sat voluminosis et hyphis filamentosis efformato. **Epicute pilei** e cellulis terminalibus hypharum subcutis filamentosarum, obtusarum, 1 – 2 (– 4) μm latis et dermatopseudocystidiis et hyphis primordialibus efformata; dermatopseudocystidiis cylindraceutis vel anguste clavatis, 27 – 50×4.4 – $5.5 \mu\text{m}$, apice rotundatis vel subacutis, tenuiter vel firme tunicatis, contentu sparso sulfovanillinae ope caerulescente munitis; hyphis primordialibus incrustatione moderatim crassa munitis, cylindraceutis vel subcylindraceutis, hyalinis vel flavis, 5 – $7.5 \mu\text{m}$ diam., apice obtusis. Subcute subgelatinosa 55 – $85 \mu\text{m}$ alta, ex hyphis hyalinis 1 – 2 (– 3.5) μm crassis, filamentosis efformata. Tegumento stipitis e dermatopseudocystidiis eis pilei simillimis, moderatim numerosis efformato.

Ad terram sub *Quercu humboldtii* Bonpl. in Humb. & Bonpl. in *Querceto montano-tropicali*.

TYPUS—Colombia, Cundinamarca, near Bojacá, Bosque de la Mercedes, 8 IV 1968, *Singer B 6013* (F).

This species reminds one of *R. lilacea* Quél. but differs in the presence of macrocystidia in the hymenium, epicutis, and stipe surface layer. Unfortunately, the FeSO_4 reaction of the fresh context is not known and we cannot explain the relation of this species to subsect. *Xerampelinae*.

***Lactarius laricinus* Sing., spec. nov.**

Pileo vulpino vel vaccino, in siccis \pm “chutney” et partim “Hispano” et “cattail” (M&P), neque hygrophano nec viscoso, glabro nec rimosello et sub lente levi et integro, opaco, subnitente tantum in vegetis humidis, nec striato nec sulcato, convexo, centro subacute et sat profunde depresso in maturis, 28 mm lato. **Lamellis** pallide carneo-cremeis, medicriter latis, horizontalibus, subdecurrentibus, intermixtis, nonnullis furcatis vel anastomosantibus sed sparse intervenis. **Sporis** in massa haud separatis sed supra lamellis inter Ia et Ib Romagnesii. **Stipite** pileo concolori, sublevi,

glabro, basin versus leniter obscuriore, apicem versus leniter pallidior, longitudinaliter canaliculato, basin versus attenuato, 25×6 mm, ad basin ± 3 mm diam. Mycelio basali sordido, haud abundante, haud strigoso nec hispido. **Carne** superficiebus subconcolori sed pallidior, sat tenui ad marginem, immutabili at lamellis fractis vegetis cinnamomeo-brunnescentibus; latice aquose albo sed haud limpido, immutabili; odore debili, subnullo in vegetis et siccis; sapore miti.

Sporis $6.5\text{--}7.5 \times 5.5\text{--}6.5 \mu\text{m}$ (cum ornamentatione), $6\text{--}6.5 \times 5\text{--}5.5 \mu\text{m}$ (sine ornamentatione), hyalinis vel subhyalinis (in NH_4OH), subglobosis vel plerumque breviter ellipsoideis, macula suprahilari amyloidea instructis vel destitutis, ornamentatione amylacea typi II, rarius IV-II vel IIIb-II, $0.3\text{--}0.6 \mu\text{m}$ projiciente munitis. **Hymenio:** Basidiis $23\text{--}33 \times 7.5\text{--}8.5 \mu\text{m}$, tetrasporis. Cystidiis $34\text{--}35 \times 6 \mu\text{m}$, anguste fusoides, apice subacutis, contentu nullo vel subtiliter granuloso impletis, sat numerosis, tenuitunicatis. **Hyphis** inamyloideis, defibulatis. Tramate hymenophorali sphaerocystibus destituto. Tramate pilei sphaerocystibus instructis. Hyphis oleiferis nullis. Hyphis laticiferis numerosis sed angustis, $2\text{--}5.5 \mu\text{m}$ diam. **Epicute pilei** ex hyphis filamentosis $1.5\text{--}3.5 \mu\text{m}$ diam. tantum efformata. Hypodermio cutiformi, pigmento intraparietali vix vel non observabili (NH_4OH) et incrustationibus nullis. Epicute et hypodermio haud gelatinosis.

Ad acus putrescentes (*Larix laricina* C. Koch) inter muscos et Hepaticas, Sphagna.

TYPUS—USA, Illinois, McHenry County, Moiraine Park, near Volo, 26 VIII 1984, *Singer N 5152* (F).

This species should be compared with *Lactarius quietus* var. *incanus* Hesler & Smith and *L. sublacustris* Hesler & Smith, but the first of these differs in the structure of the epicutis and the habitat while the latter has a gelatinous epicutis.

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